

A GLIMPSE OF THE PAST

**A tourist's guide to industrial trails,
slate quarries, mines, mills...**



A GLIMPSE OF THE PAST

Top: The Llechwedd Slate Caverns, Blaenau Ffestiniog.

Bottom: In steam, the Talylyn Railway at Tywyn.

Right: Isambard Kingdom Brunel, who undertook many great feats of engineering in South Wales.

Designed and published by the Wales Tourist Board. Copyright © 1981. Wales Tourist Board, Brunel House, 2 Fitzalan Road, Cardiff CF2 1UY. Printed in Britain by A. McLay & Co Ltd.

Contents

	Page
A Glimpse of the Past – An Introduction	3
The Slate Industry	4
Copper Mines in North Wales	7
Mining for Gold, Silver and Lead	8
Bersham Industrial Trail	12
Corn Mills	14
The Woollen Industry	16
South-west Wales – from Iron to Tinplate	22
Lower Swansea Valley Industrial Trail	26
Cynon Valley	28
Rhymney Valley	30
Rhondda Valley	32
Merthyr Tydfil	34
Walks in the South Wales Coalfield	38
Gwent – Angiddy Valley, Tredegar and Ebbw Vale	40
Torfaen Trail of History	42
The Clydach Gorge	45
Roads and Bridges	46
Great Little Historic Trains	49
Canals	53
Coastal Trade of the West Coast	57
Tours and Weekends	61
Museums in Wales	63

The Wales Tourist Board would like to thank Richard Keen of the Department of Industry at the National Museum of Wales, for his assistance in the preparation of this guide. The Board also wishes to acknowledge the assistance of the following individuals, organisations and local authorities who provided information and/or photographs:

Information and/or photographs were supplied by:
 Welsh Folk Museum
 Gwynedd Archives Services and Planning Department
 Torfaen Museum Trust
 Museum Service
 Felin Geri Mill, Cwm Cou.
 Clwyd County Council Planning Department
 West Glamorgan County Council Planning Department
 Gwent County Council Planning Department
 South West Wales Industrial Archaeology Society.
 Simon Hughes, Ceredigion Museum.
 Merthyr Tydfil Borough Council.
 Snowdonia National Park Information Service.

Pembrokeshire Coast National Park Information Service.
 Cynon Valley Borough Council.
 Rhymney Valley District Council.
 Owen Hughes, Amlwch.
 Swansea City Council.
 Department of the Environment.
 Curator, Chepstow Museum.
 National Coal Board.
 Rhondda Borough Council.
 British Steel Corporation.
 Curator, County Museum.
 Haverfordwest.
 John Player & Son, Clydach.
 Curator, Parc Howard Museum, Llanelli.
 Neath and Tennant Canal Preservation Society.
 Rock Mills, Capel Dewi.
 Maeslyn Woollen Mill Museum.
 Brecon Beacons National Park Information Service.
 R. Alan Stevens
 The Marquess of Anglesey.
 John H. Thomas, Barry.
 The Prince of Wales Committee.
 Magma Designs, Beaumaris.
 The Brunel Society.
 The Montgomery Waterway,
 Shropshire Union Canal Society.
 Brown Lenox/S. K. Jones.



How to use this guide

This book is not intended to be a gazetteer of *all* industrial sites in Wales, it is merely a visitor's guide to some of the more important locations associated with Wales's industrial heritage. It is divided into 21 sections, covering most areas of Wales, featuring such attractions as slate caverns, woollen mills, narrow gauge railways, canals etc. Industrial trails which have been established by local authorities or industrial archaeological societies are also included, with an illustrated map highlighting the main features of each trail.

Get mapped out

Many of the sites featured in this guide are in rather remote locations. To help you find them with the minimum of trouble, we have included 6 figure references and the number of the appropriate Ordnance Survey Map in each case (1:50,000 series). You are advised to follow these maps wherever possible.

Take care!

Visitors should remember that industrial relics can often be dangerous. Old mining areas in particular should be approached with caution. Never explore mine shafts or caves without an experienced guide and obey the Mining Code featured on page 8.

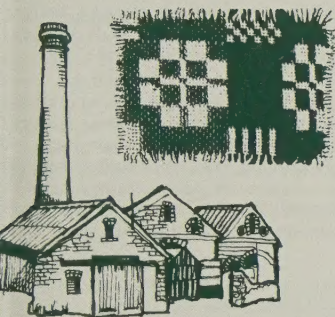
Want to know more?

Space does not allow the inclusion of every industrial site in Wales. For more detailed information it is suggested that you obtain a copy of the authoritative book on Industrial Archaeology in Wales by the late D. Morgan Rees, of the National Museum of Wales, published by David & Charles. Batsfords are also producing two new guides to North and South Wales in their Industrial Archaeology of the British Isles series, and written by Richard Keen, also of the National Museum of Wales.

Extensive reference is made in this book to land, paths, road access points and installations which may or may not be on private property. Such quotations or mention herein do not imply a right of way or any other rights and readers should take care to see that the necessary permissions in the proper form are always obtained from the owners or their agents before use is made of such facilities.

Please note that every effort has been made to ensure accuracy in this publication but that as changes in prices, services, opening times and any other information often occur after press date, it is essential to confirm all the information given direct with the establishment or authority concerned. The Wales Tourist Board can accept no liability whatsoever for any inaccuracies or omissions, or for any matter in any way connected with or arising out of the publication of the information.

A GLIMPSE OF THE PAST



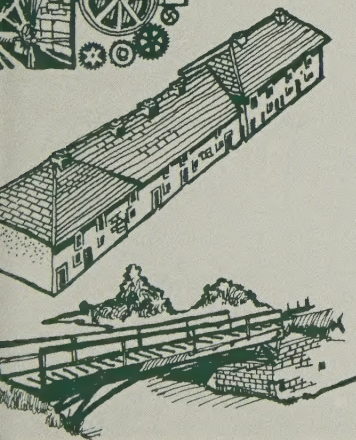
During the second half of the 16th century small ironworks were established in the valleys of the counties of Gwent and Glamorgan. About 200 years later there began at the heads of these valleys an ironmaking industry which was to change the whole face of the South Wales region. The 19th century also saw, particularly during its second half, the growth of a coal industry both in South and North Wales which demanded railways and ports so that its many millions of tons of coal could be exported to all parts of the world. A flourishing steel and tinplate industry grew out of the 18th/19th century iron industry.



Wales, particularly during the 19th century, developed a vigorous metalliferous industry and there was mining for gold, silver, lead, zinc and copper. The enormous slate quarries of North Wales provided the materials which were to make roofs for countless houses worldwide and there was quarrying for limestone and granite in various parts of the country.



Suddenly, as it were, there came an important change over industry in the form of modern developments which resulted in new processes, new factory buildings and inevitably the abandonment of the many industrial sites which had previously been so important. Quite as suddenly, almost, there came this great interest in seeing where Wales's contributions to industrial history had taken place and the industrial archaeologist came to the fore.



Industrial archaeology is a field of enjoyment for people of many professions and persuasions. One does not have to be an expert to find the interest that abounds in abandoned metal mines in all parts of Wales, on the sites of old ironworks and coal mines, along the lines of tramroads, canals and railways, on the quays and other features of ports no longer as busy as they were. This booklet points the way for those who find themselves within reach of the industries of the past and shows how important industrial archaeology has become. It will also bring a realisation that there is holiday enjoyment on interesting industrial trails and sites far removed from beaches and promenades. Hunting for industrial remains and recording them is as good a sport as any for thousands of people already. Join them!

The Slate Industry

Slate has been quarried in North Wales for many centuries, but it was the 19th century which saw the greatest period of expansion. The Dinorwic Quarry at Llanberis alone employed 3,000 people at its peak of production about 1900. A worldwide demand for slate led to the building of tramways and railways which linked the quarries with the ports developed at Porthmadog, Port Penrhyn and Port Dinorwic.

Today, slate quarrying is no longer one of North Wales's major industries, as most of the quarries ceased production in the 1960s. Yet the skills of the quarryman are not completely forgotten! A number of quarries are now experiencing a rather different form of success, measured not in slate output but in terms of thousands of visitors every year. Quarries have been developed into major tourist attractions to re-create and illustrate vividly the work and life of the former North Wales quarryman.

The skillful slate splitter at work at the Gloddfa Ganol Mountain Centre



Blaenau Ffestiniog, Gwynedd.

Gloddfa Ganol Mountain Centre

Location: 1 mile north of Blaenau Ffestiniog, on A470.

Map 115 Ref. 698470

There is opportunity to step into the slate-mining past of the largest slate mine in the world at Gloddfa Ganol, which stands high above Blaenau Ffestiniog. The story of slate, its people and their struggles, is told in an exciting and informative display at the Museum and Slate Works, where the original massive machinery is still producing an impressive range of slate products. Quarrymen's cottages, built in the 1840s, are furnished to reflect the style of three eras of slate quarrying, from the 1800s to the late 1960s.

Over $\frac{1}{2}$ mile of the old mine workings are open to the public, while for those who really want to enter the world of the slate miner by exploring some of the 42 miles of tunnels and chambers of the old workings, special land-rover tours are arranged. (Helmets and caplamps are provided.) For the younger ones there is a small tunnel, leading to a Grotto, and a Play Area.

There is also a Narrow Gauge Railway Centre and a Natural and Social History Centre.

Open: Daily, including Bank Holidays, Easter to October, 10.00 – 17.30 hrs.

Blaenau Ffestiniog, Gwynedd.

Llechwedd Slate Caverns and Deep Mine

Location: 1 mile north of Blaenau Ffestiniog, off the A470.

Map 115 Ref. 708471

Llechwedd Slate Caverns have probably done more in recent years to promote an interest in Wales's industrial heritage than any other site in the country.

Take a tram ride into the Llechwedd Slate Caverns at Blaenau Ffestiniog.



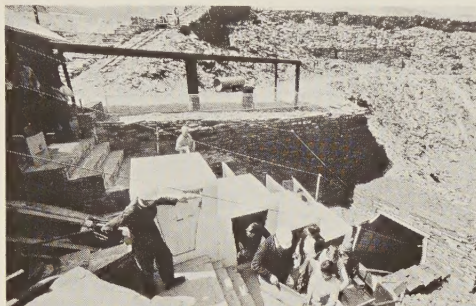
An exciting train ride takes you through tunnels – important features in this kind of quarry – to the massive 200ft. high Cathedral Cave, formed by the extraction of slate. In another cavern, 75ft. high, where Victorian mining conditions have been re-created, guides demonstrate the tools used in a bygone age when quarrymen worked by candlelight. In the slate mill, there is a small museum where the visitor can try his skill at splitting the slate, a fascinating process to watch. Close by an exhibition depicts scenes from quarry life of 100 years ago.

The Deep Mine

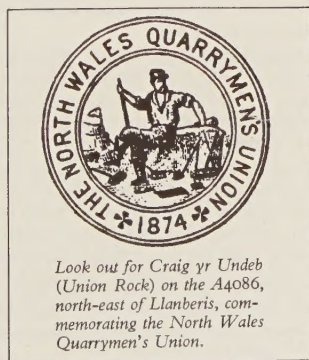
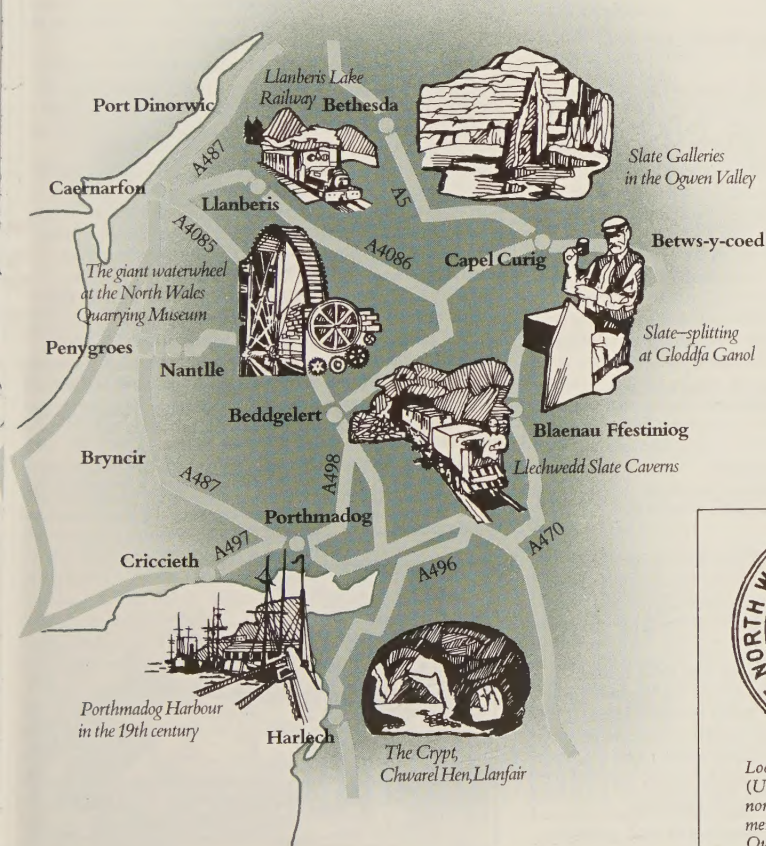
An Incline Railway enables visitors to explore the spectacular lower depths of the mine, three floors below the miners' tramway. Access to the lower floors is by means of a 24 seat car for the gradient of 1 in 8. This is the steepest passenger underground railway in Britain. Passengers alight two floors down, where, by means of sound and lighting effects, they learn something of the social life of the men who made these enormous mines. They walk through a network of chambers and down 61 steps to yet a

lower floor where one of the most moving sequences is in a gigantic chamber with a 50ft. deep lake in the centre. They re-board the car at this lower level. (The underground temperature remains at a constant 50°, so do wear warm clothing.)

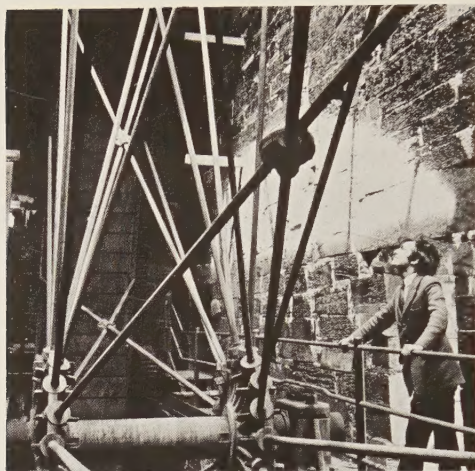
Open: Daily, including Bank Holidays, March to October 10.00 – 18.00 hrs.



You can descend further into the lower depths of the Llechwedd mine on Britain's steepest underground passenger railway.



Look out for Craig yr Undeb (Union Rock) on the A4086, north-east of Llanberis, commemorating the North Wales Quarrymen's Union.



The North Wales Quarrying Museum, Llanberis.

Open: At any reasonable time.

A very useful descriptive leaflet is available at the nearby Information Centre.

North Wales Quarrying Museum

Location: As above.

The North Wales Quarrying Museum is in the former central workshops of Dinorwic Quarry, just on the edge of the country park. Much of the original machinery remains intact in the workshops, consisting of a foundry which produced most of the quarry's ironwork, smithies, a pattern shop displaying dozens of the original wooden patterns, a woodworking department and locomotive sheds. A giant waterwheel, over 50ft. in diameter, the main source of power for all the workshops from 1875 to 1925, is an amazing sight. In a special cinema/gallery, films on the quarrying industry are shown and there are photographs which illustrate the social side of the industry.

Open: Daily, including Bank Holidays, April 9.30 – 17.30 hrs., May to September 9.30 – 19.00 hrs.

Llanfair, near Harlech, Gwynedd.

Old Llanfair Quarry Slate Caverns

Location: On A496, 1 mile south of Harlech.

Map 124 Ref. 596298

Unlike most of the North Wales slate mines and quarries, which are located inland, Chwarel Hen is only a short distance from the coast, which made it convenient to ship the slate from the nearby quayside at Llanfair.

Caverns and tunnels, hewn from the solid hillside, may be explored and parties are led by knowledgeable guides who explain the methods of mining in the 19th century. Interesting comparisons can be made with the much larger Llechwedd Slate Caverns. Underground temperature rarely exceeds 50°F in the old workings – so do wear warm clothing.

Open: Daily, Easter to mid October 10.00 – 17.30 hrs. (All year for organised parties.)

Llanberis, Gwynedd.

Vivian Quarry Trail

Location: Within the Padarn Country Park, on the shores of the lake at Llanberis. Start from Car Park.

Map 115 Ref. 586605

Slate quarrying was the traditional industry of Llanberis, as its giant mountains of slate waste still testify. The Vivian Quarry, on the shores of Llyn Padarn, and now within the recently established Country Park, was one of the Dinorwic Quarries which worked until its closure in 1969.

Along this short trail, which takes about an hour to complete, you can explore the quarry and see something of the skills of quarrying for slate. Following the paths once trodden by quarrymen you will see splitting and dressing sheds, inclines, the *caban* – or canteen – blast shelters, the former Quarry Hospital – to be used as an interpretative centre for tourists – and many more fascinating features associated with this once great industry.

Glyn Ceiriog, Clwyd.

Chwarel Wynne

Location: A short walk from the Plas Owen Hotel, which is 300 yds from the centre of the village of Glynceiriog on B4500. Free parking at hotel.

Map 125 Ref. 189378

Ownership of the Wynne Quarry can be traced to 1750, when it was in the possession of Edward Wynn of New Hall, Glyn Ceiriog. It was then worked as an open quarry, but was later taken over by the Cambrian Slate Co. Ltd., who developed the underground workings in the 1860s. Though only a small mine, nowhere on the scale of the Llechwedd mines at Blaenau Ffestiniog, it flourished in the early part of the 20th century, but was later exhausted, when operations were transferred to the Cambrian Quarry, 500 yards up the hill. Guided tours take visitors through the first and second levels of the mine, where various quarrying methods are illustrated by life size tableaux and commentaries. (Lasts 20–30 minutes). Above ground, in the Museum Building, various quarry trucks and tools are displayed, as well as the steam-driven winding machinery that hauled the loaded trucks from the depths of the mine. A way-marked walk has also been planned around the 3 acre site, showing the indigenous bird life and rich flora.

Open: Easter to end of September daily. 10.00 – 17.00 hrs. Groups and parties welcomed all year, by appointment. Tel. Glyn Ceiriog 343.

Note: While in Glyn Ceiriog, call at the Glyn Valley Hotel where a small museum to the Glyn Valley Tramway has been opened. Admission to the collection of photographs and other mementoes is free, but opening times are restricted to licensing hours. A must for railway buffs!



Copper Mines in North Wales

Mining for copper was fairly widespread in North Wales, the most prosperous mines being on the Isle of Anglesey. Here, towards the end of the 18th century, the Parys Mountain Mine was the most productive in the world, but by the end of the 19th century it was no longer productive. Other copper mines in the region, mainly in Snowdonia, brought some profits to speculators and much hard work to the miners, who often lived in barracks close to the mines. Ruins of the stone-built barracks, waterwheel pits and other mine buildings are now the only reminders of the industry in this part of Wales.



'Mines at Menai in 1702', a watercolour by Ibbetson of the Parys Mountain Copper Mine in its heyday.

Amlwch, Isle of Anglesey, Gwynedd.

Mynydd Parys Copper Mine

Location: 2 miles south of the town of Amlwch, off B5111.

Map 114 Ref. 434905

Parys Mountain is perhaps the most spectacular of all the copper mining sites in Britain. Although it began as a series of small mines in the 1760s, by 1790 it was the largest copper mine in Europe. Towards the end of the 18th century the Amlwch area was heavily populated – some 1,500 men, women and children worked at the Parys Mine. The women, known as *ledis copor*, copper ladies, are featured in a well-known watercolour of 1785 by J. C. Ibbetson which is in the National Museum of Wales, Cardiff.

Today, the deserted mountain, resembling a lunar landscape, is full of dangerous shafts and this site is **not recommended** for families with young children.

The disused windmill, once used to assist a steam engine in draining the workings is strikingly located on the summit and may be viewed from the road below. The remains of a Cornish engine house and stack of a very early period can be seen on the eastern side of the mountain.

Amlwch, Isle of Anglesey, Gwynedd.

Amlwch Port

Location: Off A5025, on Anglesey's north coast.

Map 114 Ref. 449934

Copper ore was shipped from the port for smelting at Swansea, Liverpool and St. Helens. It is now used by the Anglesey Oil Terminal Company, but from the hill overlooking the harbour you can see some interesting remains – which are reminders of the port's flourishing past. They include storage bins, quays, dock gates and a dry dock.

Beddgelert, Gwynedd.

Sygun and Nantmor Copper Mines

Location: Off A4085, about 2 miles south of Beddgelert. (O.S. Map essential).

Map 115 Ref. 606485 and 603476.

In the hills above Beddgelert, there was a great deal of copper mining activity in the 18th and 19th centuries. On the southern slopes of Nantgwynant are to be found the entrances to a number of the levels of the Sygun mine and what is left of a spectacular causeway which carried trams from the levels to the crushing floors. These floors, made of stone, descend from a high point almost to the valley bottom – various crushing operations were performed in descending order. This site is renowned for its use in the making of the film 'The Inn of the Sixth Happiness'.

A walk to the south-west from the top of Sygun mountain will bring the visitor to the levels and shafts at the head of Cwm Bychan. This valley, which descends towards the village of Nantmor, still has the remains of an aerial ropeway which carried the copper ore from the mining area to the dressing floors at the bottom of the valley.

Nantlle, near Caernarfon, Gwynedd.

Drws-y-coed Copper Mines

Location: On B4418 from Nantlle to Rhyd-ddu.

Map 115 Ref. 545534

On the edge of the Snowdonia National Park, just over the craggy mountain pass from Rhyd-ddu (B4418), lies the site of the Drws-y-coed Copper Mine, opened by Cornish miners in 1761. The surface remains of the mine, which operated until about 1918, can be seen from the roadside. They include an entrance to a level, the mouth of a shaft, two waterwheel pits, a reservoir area and stone bases which carried ore crushing machines.

The Mines of Snowdon

Map 115 Ref. 634543

Snowdon, at 3,560ft., is the highest mountain in England and Wales. The Mountain Railway, one of the 'Great Little Trains of Wales', runs from Llanberis to the summit, but the more energetic may prefer to walk up the authentic Miner's Track (2 miles) from the Pen-y-Pass Youth Hostel.

Whichever way you choose, you'll see evidence of copper workings en route. On the northern edge of Glaslyn Lake the track of a tramway can be seen, while on the shore of Llyn Llydaw, the larger of the two lakes, there are ruins of the dressing mill of the Britannia Copper Mine, and the causeway – a well-known feature of the area – which crosses the eastern end of the lake. This was built in 1853 for the transportation of copper to the road at Pen-y-Pass.

Mining for Gold, Silver and Lead

Mid Wales has a history of silver and lead mining which dates back to the Middle Ages. Many of the Ceredigion mines were first worked for their silver; for example, the one at Llywernog, which has been made into a museum. Local mines even supplied the mint at Aberystwyth with silver during the reign of Charles I.

North Wales too has its fair share of lead mines, some with evocative names such as the Klondyke and the New Pandora. Most of these are located in remote countryside, away from populous tourist haunts.

The 'California of Wales' is a small area of land, once known as the Dolgelley Gold Belt, north of the Mawddach estuary. The most productive periods of the gold mines were the 1860s and from the late 1880s to the beginning of the present century. Many speculators were attracted to the area during these periods. They were not the first to realise Wales's mineral wealth! The Romans, so it is believed, had discovered gold at Dolaucothi, in Dyfed and were no doubt supplying bullion to their Imperial Mints in Lyons and Rome soon after 75 A.D.

Mining Code.

Visitors should always observe this code for the safety of themselves and others, who may be enthusiasts exploring underground.

1. Unless you are experienced *never* venture underground. If you wish to see disused workings either visit one of the mining and quarrying museums or seek an experienced guide, who can provide equipment. Joining one of the many Clubs that specialise in this type of exploration will eventually give you experience.
2. Never discard your litter down old mine shafts or try measuring the depth with a stone. Someone may be at the bottom.
3. Beware of old mine shafts. These can become unstable and additional weight on the edge could cause a collapse. Never cross the protecting fence or enter an area of depressed ground.
4. Never tamper with ropes or ladders you may see on a site. You may strand someone below ground or worse.
5. Keep a close watch on children, if you must take them to disused mine sites.
6. Observe the Country Code.

Cyffty Lead Mine's chimney stack, which stood within the Gwydyr Forest, near Betws-y-Coed.



Betws-y-Coed, Gwynedd.

Cyffty Lead Mine Trail

Location: Within the Gwydyr Forest; about 2 miles' walk from car park at the Ugly House on A5, 3 miles west of Betws-y-Coed or from the Miner's Bridge.

Map 115 Ref. 774589

The Gwydyr Forest, accessible from Betws-y-Coed or Llanrwst, has miles of footpaths and trails illustrating various aspects of the forest. By following the path from the Miner's Bridge over the Lugwy or preferably the track from Ty Hyll (the Ugly House), you come to the Cyffty Lead Mine – a feature often overlooked by visitors to the forest. Unfortunately the remains of an engine house and chimney stack were demolished some years ago, but the powder house, waterwheel pit, leats and reservoir, and buildings which housed the dressing machines may be seen. An interpretative centre will be based in the powder house, which has recently been reconstructed.

A circular trail is planned around the lead mine, with picnic sites and other facilities provided for tourists. An illustrated leaflet will also be available.

Lead Mining in Ceredigion

In addition to the few examples quoted here, there are many more lead mines in Ceredigion which are worth a little further exploration – although not if you have young children and do not go underground. Look out for open shafts.

	Map 135
Esgair Hir, Talybont	Ref. 735913
Pensarn Mine, Talybont	Ref. 912668
Cwm Brwyno Mine, Goginan	Ref. 714805
Penypontpren and Erglodd Mines, Talybont	Ref. 647901
Ystumtuen Mine	Ref. 730783
Temple Mine, Ponterwyd	Ref. 749791

Aberystwyth's Ceredigion Museum has a fine display relating to these mines – a visit here is a must if you are to fully understand how they worked.

Open: All year, including Bank Holidays (except Good Friday, Christmas Day and Boxing Day)
Monday to Friday 11.00 – 13.00; 14.00 – 17.00 hrs.
Saturday 14.00 – 17.00 hrs.

Cwmsymlog, near Aberystwyth, Dyfed.

Cwmsymlog Lead Mine

Location: From Aberystwyth, head for Penrhyncoch and Penponthydybeddau. Turn left at the Post Office and follow minor road for 1 mile to Cwmsymlog village. (O.S. map essential).

Map 135 Ref. 704838

Cwmsymlog is an ancient mine developed in the early 1600s to provide silver for the royal coffers. It was one of the 'Mines Royal' and its output was destined for the Royal Mint. Remains of the mining village can still be seen here, as well as old dressing floors, a tall impressively built engine house chimney, and part of a winding house. Some miners' graves can be found in the chapel's graveyard.

Cwmystwyth, Ceredigion, Dyfed.

Cwmystwyth Lead Mine

Location: Along B4574, about 4 miles east of Devil's Bridge, on the eastern side of Cwmystwyth village.

Map 135 Ref. 803748

Lead has been mined at Cwmystwyth, one of the largest of the Mid Wales mines, since Roman times. It was later worked in the 14th century by the monks of Strata Florida and during the 17th and 18th centuries it became one of the most advanced lead mines in Europe, producing both lead and silver. A lunar-like landscape and the impressive remains of buildings are vivid reminders of Cwmystwyth's more prosperous days. Many of the remains can be seen from the road, including those of workshops, offices, a dressing mill (1898), turbine house, leats and tramways.

Care should be taken on this site, which has a number of adits and shafts (**Not suited for young families.**)

Open: The site, on common land, can be viewed at all times, preferably from the road.

Dylife, near Machynlleth, Powys.

Dylife Lead Mine

Location: On minor mountain road from Machynlleth to Llanidloes.

Map 136 Ref. 859942

Although there is little visual evidence of a mine to be seen from the road, other than spoil heaps, it is worth mentioning Dylife – now a desolate village, apart from its pub, the Star Inn. The mine first worked in 1770, but was abandoned in 1896. A pictorial board, erected here, illustrates some of the area's history, including murders – associated with the mine! At one time the mine was owned by Cobden and Bright. Away from the main road, a little way to the south-west, there are remains of waterwheel pits, surface buildings and pumping rods in partially-filled shafts.

Eglwysfach, Dyfed.

Dyfi Furnace

Location: On roadside of A487 at Furnace, 7 miles south of Machynlleth.

Map 135 Ref. 685952

Few visitors to Wales will drive from Machynlleth to Aberystwyth without stopping at the Dyfi Furnace site. This much-photographed site was used in the 17th century for refining silver, relying on the useful source of water power from the River Einion. Its powerful waterfall is still an impressive sight. The present building was built in the mid 18th century as a blast furnace for ironmaking and much of it remains intact. A waterwheel drove the bellows which provided the blast, but the present wheel – 31ft. in diameter – is of a later date. The site has been taken into guardianship by the Secretary of State for Wales.



Llanidloes, Powys
Bryn Tail Lead Mine

Location: On the eastern shore of Llyn Clywedog, 3½ miles north-west of Llanidloes on B4518.

Map 136 Ref. 913869

Right at the foot of the massive 237ft. high dam on the Clywedog Reservoir are the remains of a small lead mine which have been cleared and made good by the Secretary of State for Wales. A 2½ mile long scenic trail around the lake takes in the mine. An informative notice has been erected on the site, illustrating the history of Bryn Tail.

Open: At all times.



The Van Lead Mine, about 1868.

Llanidloes, Powys
The Van Lead Mine

Location: 3 miles north-west of Llanidloes, off minor road from B4518

Map 136 Ref. 941878

To the east of Bryn Tail, north of Fan Pool, are the remains of what was considered to be the most profitable mine in Mid Wales. As well as ruins of the actual mine, including two yellow brick chimneys high on the hillside, there are terraced houses, chapels and ruined buildings and reservoirs, which were all part of this once prosperous lead mining community.

Open: At all times.

Minera, near Wrexham, Clwyd.
Minera Lead Mines
(see also Bersham Industrial Trail)

Location: Along B5426, which is off A525, approx. 6 miles west of Wrexham.

Note: Sites best viewed from road.

Map: 117 Ref. 271517.

Lead was mined at Minera during Roman times, although the area was not fully exploited until the 18th and 19th centuries. Following the B5426 from the centre of the village, which also marks the start of the Bersham Industrial Trail (see overleaf), you'll find many sites associated with mining activity. For safety reasons, visitors are advised not to trespass on the former lead mining areas which are dotted with dangerous shafts. From the bridge over the R. Clywedog, drive or walk ½ mile on to the crossroads at Ref. 272512. Note the stone building in ruins on your right just above the crossroads – this housed both a mortuary and smithy, where the miners' tools and machinery were maintained and their horses shod. A short walk beyond this point, down a footpath to the right of the City Arms, at New Brighton village, leads to the City Beam Engine House, whose Cornish chimney remains

intact. Flood water was pumped out of the mine here by means of a steam-powered beam engine which was housed in this Engine House. The footpath takes you back on to the B5426.

A booklet giving full details of the trail is available from Clwyd County Planning Dept., Shire Hall, Mold.

If your holiday visit to some of Wales's mines has fired an interest in industrial archaeology, perhaps you might want to join one of the clubs specialising in mine explorations:

North Cardiganshire Mining Club,
c/o Simon Hughes, Leri Street, Talylont, Ceredigion, Dyfed.

North Wales Caving Club,
c/o Alan Hawkins, Grove Cottage, Grove Lane, Great Mollington, Cheshire.

South Cardiganshire Mining Club,
c/o Arthur Beechey, Peterwell House, Lampeter, Ceredigion, Dyfed.

Gwynedd Mines Research Group,
c/o Shon Sheltinga, Tyn-y-Groes, Trefriw, Gwynedd.
See also Tours and Weekends section on page 61

Ponterwyd, Dyfed.

Llywernog Silver-Lead Mine

(particularly suitable for young families).

Location: On A44, 11 miles east of Aberystwyth.

Map 135 Ref. 733808

In planning to visit a number of Ceredigion's lead mines it might be a good idea to start at Llywernog.

Here at this smaller mine – now an open air museum – you can follow the Miners' Trail, which tells the exciting story of silver and lead mining in Wales. You can go underground too, into Balcombe's Level, and see a floodlit cavern containing the Blue Pool, a prospecting pit sunk around 1795. Other fascinating exhibits on this 6 acre site include a rock crusher house, an engine 'shaft' and headframe, waterwheel pit, horse-whim, cast iron waterwheel, and powder house. Within the main building there is an interesting exhibition of mining called the 'California of Wales', as well as imaginative, re-created underground scenes. A 15-minute slide programme is shown at frequent intervals.

Open: Daily, Easter to end of September 10.00 – 18.00 hrs. (Closes at 16.30 during September).

Rhandirmwyn, near Llanovery, Dyfed.

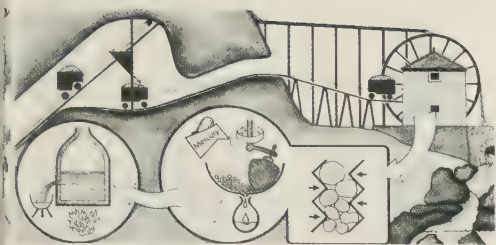
Nant-y-Mwyn Lead Mine

Location: 1 mile north of the village of Rhandirmwyn, which is 9 miles north-east of Llanovery on unclassified road to Llyn Brianne. Accessible down track from Ref. 776445.

Map 146 Ref. 788446.

Once the largest lead mine in South Wales, in a remote valley in the upper reaches of the Tywi. Mining first began there in 1775 under the Earl of Cawdor, the landowner, and it was at its most profitable in 1797. The mine was later leased to a number of companies, until it was finally abandoned in 1937. Surface remains include stone dressing floors, water courses and pits, an engine house and chimney stack. One of its attractions for the serious industrial archaeologist and the mines explorer is the fact that it was worked at two different levels.

Open: At any reasonable time, to surface remains. Do not enter shafts unless accompanied by experienced guides. Not suitable for children.



Gold of the Mawddach Valley. Where the Upper Cambrian rocks of the Mawddach valley meet those of the Middle Cambrian period, south of the Harlech Dome, there are rich seams of gold that have been worked since Roman times. One interpretation of the name Dolgellau is the Meadow of the Slaves, a possible allusion to the Roman slave labour which worked the mines. Though not worked to any degree at present, there is sufficient gold still in existence to make the wedding rings for the Royal Family, including that of Her Majesty the Queen. Several of the richer veins were worked in the vicinity of the Mawddach's headwaters at mines with names like Gwynfynydd, Bedd y Coedwr, Vigra and Ogafau. Here we show the method of a kind adopted last century for extracting, crushing and refining the ore at the Bedd y Coedwr (Marina) mine.



Miners at Gwynfynydd, about 1900.

Bontddu, near Dolgellau, Gwynedd.

Clogau Gold Mine

Location: Off A496 Llanelltyd to Barmouth road at Bontddu Hall Hotel.

Map 124 Ref. 678198

You will no doubt have heard of Clogau, a famous Welsh gold mine, which is reputed to have provided the gold for several Royal wedding rings, including the Queen's. The mines were at their peak in the 1860s, and from the late 1880s to the end of the century, although they continued to be worked off and on well into the 20th century.

At the small car park, by the telephone box, an interpretative display board illustrates a short walk along the banks of the river where prospectors often panned for gold. A brief history of the mine is also provided.

One of Clogau's levels remains open at Llechfraith (Ref. 668194), but visitors are advised to keep clear.

The Forestry Commission's interpretative centre at Maesgwm has a fascinating display relating to the

history of gold mining in Meirionnydd, including restored gold ore crushing machinery, brought from the Bedd-y-Coedwr (Marina) Mine at Ref. 742283.

Maesgwm Visitor Centre: 8 miles north of Dolgellau, on A470. Open: Easter to October.

Dolaucothi, near Pumsaint, Dyfed.

Dolaucothi Roman Gold Mines

Location: Off A482 Llanwrda - Lampeter road at Pumsaint.

Map 146 Ref. 664405

The Romans were quick to realise the wealth of gold resources in Wales, and they are reputed to have worked the Dolaucothi Mines, most probably to provide gold bullion for the Imperial Mints of Lyons, in France, and Rome. These mines, sited in the wooded Cothi Valley, provide very good examples of levels which were probably driven using hand tools only.

Two short waymarked trails, of 1 mile and $\frac{1}{2}$ mile, explore this fascinating Roman site, starting at the Ogofau Lodge, on the Cwrt y Cadno road. Following the red or white markers, remains of Roman adits, opencast workings and aqueduct systems can be seen.

Museum: For a greater understanding of these gold mines, you must visit the new museum at Abergwili, on the outskirts of Carmarthen. A display here, relating to the mines, includes material found on the site during excavations.

Open: Weekdays 10.00 - 16.30 hrs.

Leaflet: 'The Roman Gold Mines at Dolaucothi', available at the museum.

Ganllwyd, near Dolgellau, Gwynedd.

Gwynfynydd Gold Mine

Location: In Coed-y-Brenin Forest, 3 miles north of Ganllwyd.

Map 124 Ref. 736275

Visitors are recommended to park their cars at the Forestry Commission Picnic Site at Pont Dolgefeliailu (Ref. 721269). The Coed y Brenin visitor map, available at the Maesgwm Visitor Centre, would be a useful aid. The Centre also displays some gold mining machinery. Alternatively, you can park, off the A470, 400yds. north of the Tyn-y-Groes Hotel, then walk the 3 miles along the banks of the Mawddach River to Rhaeadr Mawddach (Ref. 736275).

(Note: It is not advisable to drive to Gwynfynydd.) A shorter walk extends from a small Forestry Commission car park beyond Pont-ar-Eden at the northern end of Ganllwyd village. (Ref. 733251).

Gwynfynydd is among the most scenically located mines in Wales, being in the heart of the Coed-y-Brenin Forest. The shorter walk from Pont-ar-Eden or Pont Dolgefeliailu is well worth the effort, if only for the spectacular sight that awaits you at Rhaeadr Mawddach, where two remarkable waterfalls merge into the one river. Just below Rhaeadr Mawddach, remains can be seen of the Gwynfynydd dressing mill, and the cast iron pipe which brought the water from the river to feed the turbine which worked the machinery in the mill. Other buildings, including an old strong room for storing the gold, are to the north of the falls on the west bank of the Mawddach at Ref. 735275, close to the entrance to the best-known level of the gold mine.

Bersham Industrial Trail

Ironmaking at Bersham dates from 1670, although it did not reach its peak until the 1780s when John Wilkinson had extended the works considerably. Many of the original features of the ironworks are still visible at Bersham, and are described here.

A furnace, using charcoal for smelting, is known to have existed here at Bersham 10 years before Abraham Darby's first experiments with coke for smelting iron at Coalbrookdale. As in the South Wales ironworks, charcoal was replaced by coke in the blast furnace in 1721, and a few years later, in 1730, Darby's son-in-law took over the Bersham Furnace. But it was not until 1753 that the Wilkinson family acquired the lease on Bersham.

By 1762 John Wilkinson owned the New Bersham Company and was producing a range of items including pipes, shells, grenades, guns and box heaters. He later extended the East Works and was boring cylinders for James Watt's famous steam engines by 1775. (Watt's eldest son was sent to study at the Bersham foundry.)

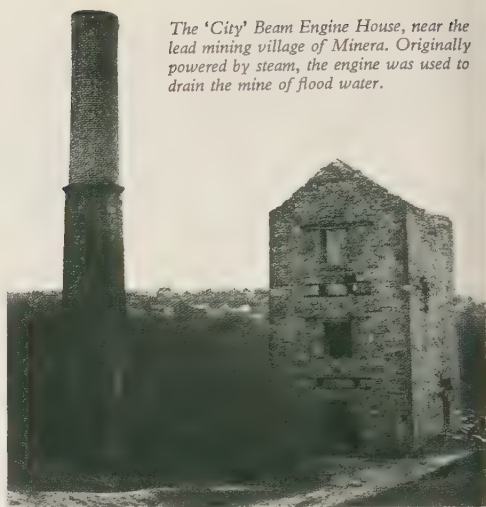
The years which followed were very prosperous for Wilkinson; he took out patents for rifling cannons, making lead piping and by 1791 he had purchased Brymbo Hall and an estate of about 500 acres.

The beginning of Bersham's decline came with the fall in demand for arms at the end of the Napoleonic wars. The works was then taken over by a number of companies, including John Wilkinson's son, but they failed to make the works successful.

This was the end of the ironmaking era at Bersham and the end of the Wilkinson's connection with the area.

For more detailed information about the Bersham Industrial Trail you must obtain a copy of the guide published by Clwyd County Council and available from the Shire Hall, Mold, Clwyd.

The 'City' Beam Engine House, near the lead mining village of Minera. Originally powered by steam, the engine was used to drain the mine of flood water.



Wrexham, Clwyd Bersham and Clwydog Industrial Trail

Visitors attracted to Erddig Hall, one of the National Trust's most fascinating historic houses, can delve a little further into Wrexham's history by following this 8 mile long industrial trail, which follows a route between the lead mining village of Minera and King's Mills. It centres upon the ironworking village of Bersham, so shorter routes can be taken, if time is limited. Guided tours for parties (minimum 15 persons) are arranged by Clwyd County Council Planning and Estates Department, Shire Hall, Mold, Clwyd. Tel. Mold 2121.

The trail starts at the village green by the B5426 at Minera.

MAIN POINTS OF INTEREST AT BERSHAM

The Caeau Weir

This 18th century weir provided water to the leat which fed water to what is now the Corn Mill Building – possibly John Wilkinson's boring mill. The stone steps were not 18th century features, but were added comparatively recently. The nearby Caeau Bridge over the River Clwydog dates from the same period. Also to be seen here is the mill race – a channel which conveyed water from the weir to the mill building, a distance of about 300 yards, and the sluice which controlled the flow.

Bersham Bank Cottages

These 18th century cottages, contemporary with the Accounts House opposite, appear in a sketch of the Old Bersham Ironworks from the same period.

Corn Mill Building

Built on the site of the early 18th century ironworks, this building may have been one of John Wilkinson's boring mills. Note how the lower part of the structure is of stone – possibly from the early ironworks – while the upper portion is of brick. The windows are of cast iron and may have been made at the Bersham works. Within the building, a massive cast iron waterwheel is still intact. Also worthy of note is the archway, now filled in, which may have been an opening to allow large steam engine cylinders and cannon to be taken in and out of the building.

The Accounts House

John Wilkinson's plan of 1763 shows this cottage to be the Accounting House for the Bersham Ironworks. The safe, which

housed the works' accounts, is still incorporated in the extended part of the building on the south-east wall – a feature worth noting.

The Octagonal Building

This striking building, presently used as a barn, must have played an important role in the Bersham Ironworks. It is featured in the 1780s drawing of the works, surrounded by smaller buildings with cast iron chimneys. A centrally pivoted gantry crane which could swing a full circle of 360° was most probably supported within this building. A similar crane is known to have been operated at John Wilkinson's smelting house at Broseley. It could lift heavy ladles of molten iron, which was then poured into sand moulds on the floor or into box moulds to cast cannons, cylinder pipes, etc. The building may have been a cannon foundry, its close proximity to the blast furnace certainly suggests a link with casting.

Pentre Saeson foundry near Brymbo has a similar crane, which is used to lift heavy ladles of molten iron.

The Ballistics Bank

Newly constructed cannons from the works were tested for accuracy by firing shots at this Ballistics Bank, which acted as a butt or stop. Cannon balls have often been dug out of the semi-circular bank.

It is surprising to note that many, if not most, of the cannon used by the British armies during the Peninsula War, as well as those used by both armies in the Russian and Turkish wars, were made here at Bersham.

Furnace Field

In front of the bank is the Furnace Field, which was the main centre of operations for Wilkinson's New Bersham Company. Water power from the River Clywedog was replaced by the steam power of James Watt's steam engines.

Remains of the Blast Furnace can be seen on the opposite bank of the river. Bellows, operated by a waterwheel positioned in or near the Clywedog, provided the blast for the furnace, which was in use throughout the 18th century.

Weir for the East Works

John and William Wilkinson's New Bersham Company built this weir during or after 1763 to provide water via a leat or race to power the waterwheels and machinery of the east works. It is shown clearly in the 18th century sketch of the West Ironworks. Traces of the mill race to the East Works are still discernible in the vicinity, near the junction with the B5099.

Bridge Cottages and Ivey Cottage

The delightful Bridge Cottages, with their black and white half timbered effect, probably date from the 17th century, and were, no doubt, later occupied by employees of the Bersham Works during the 18th century. Ivey Cottage also dates from the same period and is known locally as the Squire's Cottage. Beneath the corrugated sheeting, there is a thatched roof, seen in Rowe's sketch of about 1785. The cottage is named after Daniel Ivey or Ivy, who lived here while working at the Ruabon Furnace in 1732.

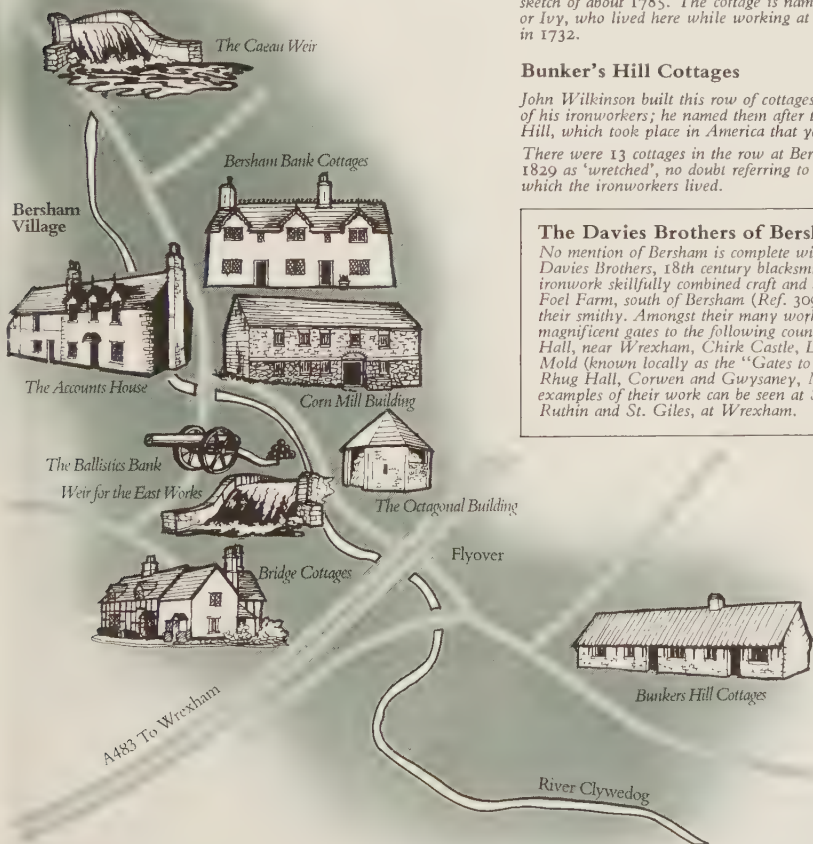
Bunker's Hill Cottages

John Wilkinson built this row of cottages after 1775 to house some of his ironworkers; he named them after the battle of Bunker's Hill, which took place in America that year.

There were 13 cottages in the row at Bersham, described in 1829 as 'wretched', no doubt referring to the poor conditions in which the ironworkers lived.

The Davies Brothers of Bersham

No mention of Bersham is complete without reference to the Davies Brothers, 18th century blacksmiths, whose wrought ironwork skillfully combined craft and art. A plaque at Croes Foel Farm, south of Bersham (Ref. 309482) marks the site of their smithy. Amongst their many works of art are the magnificent gates to the following country houses: Erdrig Hall, near Wrexham, Chirk Castle, Leeswood Hall near Mold (known locally as the "Gates to Heaven and Hell"), Rhug Hall, Corwen and Gwysaney, Mold. Other striking examples of their work can be seen at St. Peter's Church, Ruthin and St. Giles, at Wrexham.



Note: This trail can be followed on foot

Corn Mills

Before the Industrial Revolution water was the most important source of power for driving industrial machinery. The fast-flowing streams and rivers of Wales were used to drive the corn mills and woollen mills, which were scattered around the countryside. Water also drove the giant waterwheels at the metal mines of North and Mid Wales, and bellows and tilt hammers of iron forges in the 18th century.

A number of working corn mills remain, particularly in West Wales; others, still housing much of their original machinery, have been restored and are now open to visitors.

Bachelldre, near Churchstoke, Powys.

Bachelldre Mill

Location: Off A489 Churchstoke to Newtown road, on the England-Wales border at Bachelldre, 3 miles south-west of Churchstoke.

Map 137 Ref. 243929

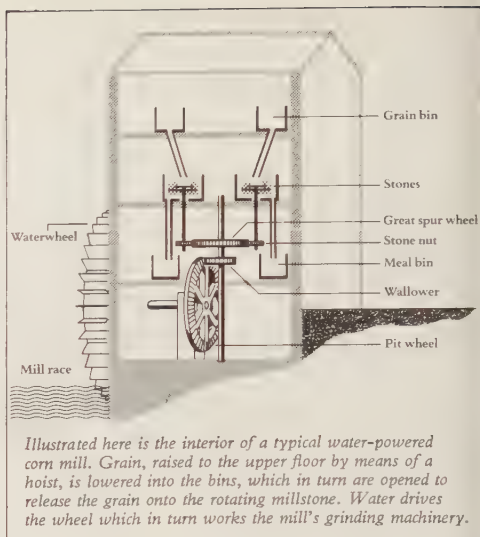
A rare surviving example of a water-powered corn mill, now restored to working order. Corn is ground on most days, producing small quantities of wholemeal flour. The three-storey mill, in local stone, is also a building of historical interest. An undershot wheel is the main power source; this differs from the overshot type, in that the lowest part of the wheel is immersed in the flow of the stream.

A leaflet, one of a series produced by the Planning Information Service, Powys County Council, describes the workings of the mill in greater detail.

Teas, lunches; dinner parties by arrangement.

Open: All year at any reasonable time, during afternoon 14.30 onwards. Please telephone Churchstoke 489 if travelling from any distance.

Carew Mill, the only surviving tidal mill in Wales.



Illustrated here is the interior of a typical water-powered corn mill. Grain, raised to the upper floor by means of a hoist, is lowered into the bins, which in turn are opened to release the grain onto the rotating millstone. Water drives the wheel which in turn works the mill's grinding machinery.

Cardiff, South Glamorgan.

Melin Bompren Corn Mill

Location: In the grounds of the Welsh Folk Museum at St. Fagan's Cardiff.

Map: 171. Ref: 115773.

Melin Bompren originally stood on the banks of the river Soden between New Quay and Cross Inn, in Ceredigion, Dyfed. After four years of reconstruction stone by stone, it has now been restored to full working order. The three-storey building, originally built in 1852-3, has an adjacent corn-drying kiln. Inside, it is typical of a small country mill of the first half of the 19th century.

The machinery, hidden from the visitor by a partition, consists of a series of wooded-cogged wheels, run by gearing from the waterwheel, which is driven by water pumped uphill, replacing the original pond. Grain was taken to the upper floor and fed through hoppers to the two pairs of stones – one for grinding oats and barley, and the other for wheat.

Open: All year. April to September: Weekdays 10.00 – 18.00 hrs. Sundays 14.30 – 18.00 hrs. October – March: Weekdays 10.00 – 17.00 hrs. Sundays 14.30 – 17.00 hrs. Closed Christmas Eve, Christmas Day, Boxing Day, New Year's Day and May Day.

Carew, near Pembroke, Dyfed.

Carew French Mill

Location: On the south bank of the Carew River, about 5 miles east of Pembroke.

Map 157 Ref. 042037

Carew French Mill is the only tidal mill remaining intact in Wales. Early records show that it was in existence in Elizabethan times, although the present three-storey building dates from the early 19th century, when it was used for grinding corn to produce flour. It ceased operating in the early part of this century. The tidal waters of the Carew River are the mill's source of power – on the incoming (rising) tide, water enters the mill pond upstream of the mill, where it is stored. Then on the ebb tide (falling), the water is released to drive the undershot waterwheels, which work the mill machinery.

A picnic site is provided on the northern shore of mill shop. The mill's own bakery provides bread and scones for visitors at the cafe alongside the mill.

Open: Daily, April to September 10.00 – 18.00 hrs. weekdays. Sundays 14.00 – 18.00 hrs.

Cwm Cou, near Newcastle Emlyn, Dyfed.

Felin Geri Flour Mill

Tel. Newcastle Emlyn 710810.

Location: $\frac{1}{2}$ mile off B4333 at Cwm Cou, 1 $\frac{1}{2}$ miles north-west of Newcastle Emlyn.

Map 145 Ref. 301423

Felin Geri has been drawing its water from the River Ceri to grind corn since 1604. It is still grinding in the traditional fashion, using the original means of production, yet operating on a regular commercial basis. The mill, with its very old outbuildings, is set in the heart of the unspoilt Ceri Valley. Visitors are welcomed during working hours to see all the stages of production and their stone-ground wholemeal flour can be purchased at the mill shop. The mill's own bakery provides bread and scones for visitors at the cafe alongside the mill.

Open: All year. Weekdays 10.00 – 18.00 hrs. Weekends 10.00 – 16.00.

Llansantffraid Glan Conwy, near Colwyn Bay, Clwyd.

Felin Isaf

Tel: Colwyn Bay (0492) 68646

Location: Just off A470, at Llansantffraid Glan Conwy, in the Conwy Valley. On right when approaching from North Wales coast.

Map 116 Ref. 802747.

Felin Isaf is a 17th century flour mill which was restored in 1979. The mill itself fell into disuse at the turn of the century, but has now been carefully reconstructed into working order. As far as possible the mill has been restored to its 1870 condition, when operations were at their peak, but much of the machinery dates back to 1730. The buildings, beautifully placed in a woodland setting, are unique in that the stonework and roof structures have remained virtually unaltered since the early 18th century and it is one of only a few genuine examples of this type of mill. Flour is ground at the mill in the traditional manner and can be bought from the adjoining mill shop. With the aid of a useful guide you can follow the waymarked tour, through natural woodlands, starting from the spacious car park. Picnic sites provided. Also refreshments.

Open: April to October, Tuesday to Saturday. 10.30 – 17.00 hrs. Sunday 14.30 – 17.00 hrs.

Narberth (Pemb.), Dyfed.

Blackpool Mill

Location: On the south bank of the Eastern Cleddau, about $\frac{1}{2}$ mile off the A40 Carmarthen – Haverfordwest road at Canaston Bridge.

Map 158 Ref. 060145

Blackpool Mill, built in 1813 for wheat grinding and flour making, is one of the finest examples in Britain of a corn grinding mill. A turbine, driven by water from the Cleddau, at one time worked the machinery but this is now worked by electricity.

Within the mill there is also an interesting display of old accounts, bills and wages, as well as a small restaurant.

Open: Daily, Easter to September 11.00 – 18.00 hrs.

Parkmill, Gower, West Glamorgan.

Parkmill Corn Mill

Location: Adjoining ford, in village of Parkmill, which is on A4118, about 10 miles south-west of Swansea.

Map 159 Ref. 544893.

Dating from the 17th century, this water-powered corn mill is still in regular use. Like Felin Geri at Cwm Cou, the mill adjoins a water-powered sawmill. A traditional lime kiln, known as the Green Cwm Lime Kiln, is just a short walk up the valley from Parkmill, beyond ford along Forestry Commission road. After $\frac{1}{2}$ mile, go through gates into field, walking a further 400yds. to the kiln, which is opposite a megalithic chambered cairn. Recently restored by Gower Crusaders, who have produced a booklet about it. (Available locally).

Open: Mill by arrangement with the miller; kiln at any reasonable time.

Porthmadog, Gwynedd.

Melin yr Wyddfa, Snowdon Street

Porthmadog Pottery (formerly the Snowdon Mill)

Location: At the end of Snowdon Street, which is opposite the Post Office, Porthmadog.

Map 124 Ref. 569388.

The Felin yr Wyddfa (Snowdon Mill) at Porthmadog was built in 1869 when Porthmadog had a fleet of over 200 ships carrying slate to all parts of the world. The mill made flour for the ships' biscuits, which were reputed to be the most weevil-proof biscuits available. Now the old engine rooms and first floor of the mill houses the Porthmadog Pottery.

Open: Monday to Friday 9.00 – 17.00 hrs. Weekends during summer.

Wrexham, Clwyd.

Melin Puleston Agricultural Museum

Location: 1 mile south-west of Wrexham town centre, on the outer perimeters of the Erddig Estate (National Trust). By road, follow the signs for Erddig. On foot from Ruabon Road cross over to the lane leading to Felin Puleston.

Map 117. Ref. 325494

For centuries the River Clywedog, near Wrexham, provided the source of power to drive corn mills, fulling mills and paper mills which existed along its banks. Felin Puleston, only a short walk from Erddig, the National Trust's recently restored historic house, is a feature of the Bersham Industrial Trail mentioned in greater detail on page 12. It is known to have been used as a corn mill as early as 1620, later to be owned by John Wilkinson, the ironmaster of the Bersham Ironworks.

Remains of a rival mill, Kingsmills Old Corn Mill, can be seen further downstream at Ref. 345488. En route you pass the Kingsmills Weir, which was built to allow water to enter the mill leat via a sluice gate, the remains of which can also be identified. Being once a part of the Erddig Estate, the Kingsmills most probably provided the hall's bakery with all its flour.

A picnic site is provided at another mill, the Nant Mill, 5 miles upstream and 1 mile south-east of Minera. An agricultural museum is housed here now, showing how farm machinery evolved during the latter half of the 19th century. Over 100 exhibits include a fine collection of hand tools.

Open: Easter to end of October, daily excluding Monday, 12.00 – 17.30 hrs.

The Woollen Industry

Wales has over 6 million sheep, that is nearly three for each member of the population! So it is not surprising that we have a long tradition of spinning and weaving, which goes back to the Middle Ages. Until the last century, the woollen industry was amongst the most important industries in the country and the most widespread. Woollen mills and early fulling mills, in various parts of Wales, still bear witness to the importance of wool to the country's economy. Some of these mills, located in unspoilt rural areas, are still producing traditional Welsh weaves, although their market has changed and now depends to a large extent on the tourist trade.

Larger mills, on the lines of the Lancashire and Yorkshire textile mills, were established in Wales in the first half of the 19th century, when the industry was at its most prosperous, employing large numbers. Newtown was then known as 'The Leeds of Wales'. The industry's golden era lasted until the 1920s, but then came a period of gradual decline and many mills were closed.

None of the larger mills remains in Newtown, but in West Wales and in Holywell there are some larger Yorkshire type mills still working, as well as smaller rural mills, some of which still use waterwheels to drive their machinery.

Visitors can watch Welsh flannels and tapestries being woven at the Meirion Mill, Dinas Mawddwy.



Museum of the Woollen Industry - Dre-fach Felindre, Dyfed - Factory Trail

For about sixty years, from 1870 to 1930, Drefach Felindre and the surrounding villages was the most important woollen manufacturing district in Wales. Most of the area's inhabitants were concerned with some aspect of the industry, many of them working in their own homes. Towards the end of the century, however, several large comprehensive mills were built, and a local historian writing in 1899 states that, 'There is hardly a spot on the banks of the rivers where it would be convenient to build an additional factory or mill'. These developments, together with the coming of the railway in 1895, presaged the golden age of the industry which lasted until the dramatic collapse of the market in the 1920's. Since that time the area has experienced a steady decline in its fortunes, until now only a handful of working mills remain.

It is the aim of this trail to trace the development of the woollen industry in the area, to demonstrate its former pre-eminence in local life, and to look at its last remaining vestiges.

1 Cambrian Mills

Cambrian Mills is one of the few remaining working mills in the village. Founded in the 1840s as the weaving shop of Doldywyll, it was re-built and re-equipped in the early years of this century. In its heyday it was the largest of the local factories, employing over fifty people, satisfying the demand of the industrial communities of South Wales for flannel. Parts of the mill were rebuilt in the 1920s following a fire.

Museum of the Woollen Industry

It is adjacent to Cambrian Mills, and contains an extensive collection of textile machinery and tools dating back to the eighteenth century along with an exhibition of photographs tracing the story of the woollen industry in Wales. There is a car park, and a picnic area. Admission Free. Open 10-5, Monday - Saturday, 1 April - 30 September. Tel. Velindre (0559) 370453.

Dre-fach Felindre Factory Trail



2 Square Hall

A large comprehensive mill built in the 1890s on the site of an earlier fulling mill, (Y Felin Isaf) and a corn mill (Y Felin Farch). Fulling, the cleansing and thickening of the cloth by beating with heavy wooden hammers, was the first stage of the manufacturing process to be mechanized. Square Hall closed in 1957, and is now a warehouse.

3 Dre-fach

The houses from the Red Lion Hotel to the junction form the nucleus of the village of Dre-fach (which became joined to Felindre in the early twentieth century). Many of the houses such as Central House, Felinfach, Pensinrug and Pensarn were at one time weaving shops. The imposing house on the left is Metros Hall – typical of the elegant residences built by the more prosperous of the local woollen manufacturers.

4 Meiros

Another of the large comprehensive mills built in the 1890s. It was burnt to the ground in the 1920s and rebuilt on a smaller scale. Since its closure in the 1940s it has been used at various times as a warehouse.

5 Capel Penrhiw

The small plaque in the graveyard below the road at the junction marks the site of Capel Penrhiw. A Unitarian Chapel built in 1777, it demonstrated the typical classic simplicity of the early non-conformist meeting houses. It was removed to St. Fagans in 1953 and now stands in the grounds of the Welsh Folk Museum.

6 Bargod Mills

Standing some one hundred feet below the lane is Bargod Mills, a small family run concern dating from the 1890s. Closed in the early fifties it has now been converted into a dwelling house.

7 Dolwion

One of the first factories in the area, established around 1820 on the site of a fulling mill. It was later rebuilt and modernized, and finally closed in 1972. The remains of the trough which carried the lead to the water wheel can still be seen. Dolwion is reputed to be the ancestral home of John Adams who became president of the United States in 1797, and whose son John Quincy Adams followed him in the same office in 1825. Another member of the family, Dinah Adams, represented the industry at the Chicago World Fair in 1893.

8 Felin Newydd

The present building is nineteenth century in construction, but stands on the site of a much older mill which was at one time the estate mill of the Lordship of Emlyn Uwch Cych. A typical three-storeyed rural corn mill, it ceased to operate in the early sixties. The lead from the mill can be seen flowing into the river at the bridge. The bridge itself was originally humped, a very necessary feature in this district of steep sided valleys where the run-off of rain water is so rapid, and the rise in the level of the streams so sudden.

9 Dyffryn

A mill called Llwynbedw existed on this site in the 1830s. It was greatly expanded in the 1850s and re-named Dyffryn. At one time the mill had two water wheels – one above the other – which enabled twice the power to be obtained from the same head of water. On the left hand side of the road some hundred yards above the factory there is a flight of stone steps. These once led to the sluices which controlled the flow of water to the mill. Samuel Williams, Dyffryn, was one of the pioneers of the industry, being the first in the district to carry out all the manufacturing processes under one roof. Dyffryn supplied a very large market, including its own retail outlet in Middlesborough. The present buildings were built, on a much smaller scale, following a disastrous fire in the 1920s. The mill is one of the few in the area still in production.

10 Dangribryn

A small mill run in conjunction with a small-holding, typical of many in the area. Closed in 1945 and thereafter converted into dwelling houses. When the lease on the mill expired, the tenant John Jones built a workshop, which can still be seen across the road at Glanesger. At the top end of the present garden there was a pond from which ran a lead, first to Dangribryn, then on to Dyffryn.

11 Ogof

Typical of many weaving shops which were common in the district before the establishment of the larger mills. Originally the building was thatched, with the family living in the centre, and workshops on either side. A larger mill was built in 1908 on the other side of the road. Very little remains of this following a fire in the 1920s.

12 Rhydwyrn

Another of the part-time mill/small holdings built in 1895. It was run by the same family until its closure in 1960.

13 Felindre

From Rhydwyrn to the church is the nucleus of the second village, Felindre. Many of the houses were at one time weaving shops, e.g. Pendre, Bangor House, Arfon House, Cross Vale and Bridge House. The remains of several shops, tea rooms, and a second public house illustrate the former importance of the village as a commercial centre.

14 Spring Gardens

Originally a hand-loom workshop. It was mechanized in 1900. Yarn was obtained from a second factory belonging to its owner at Cwmorgan some ten miles away. Spring Gardens was used as a warehouse in later years and was destroyed by fire in the late 1970s.

15 Llainfald

A weaving shop which was mechanized at the turn of the century. It was burnt to the ground in the 1920s, and was rebuilt as a dwelling house.

16 Saint Barnabas

St. Barnabas Church was built in 1862–63 by the Earl of Cawdor. The parish church of Penboyr is over a mile away from the village, and the siting of St. Barnabas reflects the growth of population in the village with the development of the woollen industry. The village square is known locally as 'Sgwâr Gai' (the Gate Square), a reference to a tollgate which once stood nearby, which was destroyed by Rebecca Rioters in June, 1843.

Woollen Mills in Wales

Ambleston, Haverfordwest, Dyfed.

Wallis Woollen Mill

Tel. Clarbston 043782 297

Location: 8 miles north-east of Haverfordwest on B4329.

Map 157 Ref. 014256

Wallis, founded about 1800, was a flourishing mill, specialising in knitting yarns, in the 19th century. The water turbine is being renovated, while the mill pond, now restored, was re-opened by H.R.H. Prince Charles in 1978; there is a flannel press, dating back to 1795. Three looms are still working at the mill, which produces quality Welsh weaves. In an adjacent studio a 25 minute audio-visual programme tells the story of the mill and its craft.

Open: All year. Daily, Monday – Friday, including Bank Holidays 10.00 – 18.00 hrs.

Capel Dewi, Llandysul, Dyfed.

Rock Mills

Tel. Llandysul 2356.

Location: 400 yards from B4459, off the A475 Lampeter – Newcastle Emlyn road at Rhydownen.

Map 146 Ref. 452423

One of the few remaining working water-powered woollen mills in Wales, Rock Mills was founded in 1890 by the grandfather of the present owner. Some of the original machinery remains intact and in good working order producing woollen yarn which is sold at the mill shop. Even the original 19th century waterwheel is still in use.

Open: All year. Weekdays 10.00 – 18.00 hrs. Saturday mornings only.

Cardiff, South Glamorgan.

Esgair Moel Woollen Mill

Tel. Cardiff 561357

Location: In the grounds of the Welsh Folk Museum, St. Fagans.

Esgair Moel Mill, now preserved at the Welsh Folk Museum, is typical of the small mills established throughout Wales in the 18th and 19th centuries. It

was founded about 1780 at Llanwrtyd Wells, but reconstructed here, stone by stone, in 1953. Traditional methods are still used and the equipment is all driven by water power.

Open: Weekdays 10.00 – 18.00 hrs. Sundays 14.30 – 18.00 hrs. from April to September; weekdays 10.00 – 17.00 hrs. from October to March and 14.30 – 17.00 hrs. on Sundays.

Cynwyl Elfed, near Carmarthen, Dyfed.

Cwmduad Woollen Mill

Tel. Cynwyl Elfed 337.

Location: 9 miles north of Carmarthen on A484.

Map 145 Ref. 377308

Cwmduad operated as a working mill from 1840–1960, producing blankets, flannel and tweeds. It was a family business, employing apprentices from the orphanages of Cardiff and the Valleys. Although most of the original machinery has been removed, the waterwheel remains, as well as the spur wheel which it drove. A small museum depicting life and work in the village and mill in their heyday is being established, as well as demonstrations of handloom weaving and spinning.

Open: Summer – daily 09.30 – 19.30 hrs (18.30 hrs. Sundays). Winter – Monday to Saturday 09.30 – 17.00 hrs.



Dinas Mawddwy, near Dolgellau, Gwynedd

Meirion Mill

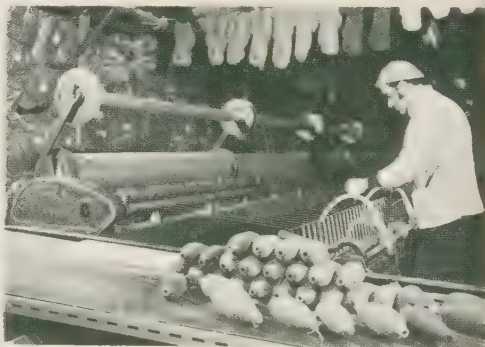
Tel. Dinas Mawddwy 311.

Location: On A470, approximately 9 miles east of Dolgellau.

Map 124 Ref. 857138

Meirion Mill, originally a farmers co-operative, continues to remind us of the great importance of the wool trade here in the past by producing fabrics in Pure New Wool highly valued for their traditional quality and by providing year round employment for local people. It is also interesting that Meirion Mill occupies the buildings of the original Dinas Mawddwy Railway station, which also served the nearby slate quarry. The original wrought-iron entrance gates (c. 1870) to the station have been restored by local blacksmiths, and several other railway relics survive on the site. Part of the trackbed has been preserved as a railway walk and area for visitors to exercise their dogs without harm to

Setting up a spinning mule at Brynkeir Woollen Mill, Golan, near Porthmadog.



surrounding livestock. The original railway booking office is now a very good Coffee Shop with a special recommendation in the Egon Ronay 'Just a Bite'.

Open: April to October 7 days 10.00 – 16.30 hrs.
Admission and parking free. Tel. Dinas Mawddwy 311 and 338.

GOVILON Woollen Manufactory.

MONMOUTHSHIRE.

HENRY PRICE begs leave to inform his friends and the public, that in addition to his Felling, Dying, and Dressing Establishment, he has recently erected a

CARDING SPINNING FACTORY,

and will carry on the manufacturing of Cloth, Kersycmeers, Blankets, and Flannels, in all their various branches, in a manner, he flatters himself, equal to any in the Principality, on the lowest terms.

All orders addressed to him will meet with prompt execution, and every unnecessary delay will be always studiously avoided.

Advertisement for a new mill at Govilon near Abergavenny (19th century).

Golan, near Porthmadog, Gwynedd.

Brynkir Woollen Mill

Tel. Garndolbenmaen 236.

Location: Approximately 4 miles north of Porthmadog, off A487, at Golan.

Map 124 Ref. 528425

Brynkir Woollen Mill was founded in 1830 on the site of an earlier 17th century fulling mill. There are earlier references to a watermill in these parts in the mid 14th century. A waterwheel still remains in its original site, although much of the original machinery has been replaced by more modern equipment.

Open: Weekdays only 08.00 – 16.30 hrs. (16.00 hrs. on Fridays).

Holywell, Clwyd.

Holywell Textile Mills

Tel. Holywell 712022.

Location: On B5121, next to St. Winefride's Well.

Map 116 Ref. 185764

Unlike most of rural North Wales's small woollen mills, that at Holywell resembles the large-scale type of mill found in Lancashire and Yorkshire. Originally known as Upper Mill, it was built in 1777 for cotton spinning, but was later converted to flannel manufacturing in 1841, along with the adjoining Crescent and Lower Mills.

Wales's first power loom for weaving wool was set up in the Upper Mill in 1845, but in 1883 it was completely destroyed by fire and the present structure was erected on the site in the following year. Note the stone plaque commemorating its

opening, which was the cause for a public holiday in the town!

Open: All year. Mill: Monday to Friday, normal working hours, otherwise by appointment. Mill shop: Monday to Saturday, including Bank Holidays, 09.00 – 17.30 hrs.

Llandysul, Dyfed. Curlew Weavers

Tel. Rhydlewis 357.

Location: Between A487 and B4571, north of Newcastle Emlyn.

Map 145 Ref. 328455

A thriving small mill, set by the River Ceri, in an area which was once a thriving woollen-producing region. It now specialises in tweeds and furnishing fabrics. (No significant history).

Open: All year, Monday to Friday 08.00 – 17.00 hrs.

Llandysul, Dyfed. Maesllyn Mill and Museum

Tel. Rhydlewis 251.

Location: 4 miles north-west of Llandysul, off A486.

Map 145 Ref. 368447.

Maesllyn was one of the large number of new mills established in the Teifi Valley of West Wales during the last quarter of the 19th century. It was founded in 1881 and again based to a large extent, on a Yorkshire mill design. Most of its machinery is of that era, including the willeying machine, dated 1881, the carding engines and rotary loom, all of which are functioning to this day in what has become a working museum.

A tour of the mill is suggested, aided by their useful booklet.

Open: All year, Monday to Saturday, including Bank Holidays 10.00 – 18.00 hrs. Sunday 14.00 – 18.00 hrs.

Llanwrtyd Wells, Powys.

Cambrian Factory

Tel. Llanwrtyd Wells 211.

Location: $\frac{1}{2}$ mile east of Llanwrtyd Wells on A483.

Map 147 Ref. 885475

When World War I ended in 1918, the Cambrian Factory was established to give employment to ex-servicemen and women disabled in the war. But it was originally founded in the 1820s, producing flannels which were sold in the local markets. New buildings and machinery are in evidence.

Open: Weekdays only 08.15 – 17.00 hrs. (15.45 hrs. on Fridays).

Llanybydder, near Lampeter, Dyfed.

Siwan Woollen Mills

Location: From A485 Carmarthen-Lampeter road, at main crossroads in Llanybydder, follow B4337 for $\frac{1}{2}$ mile to mill.

Map 146. Ref. 535437.

Llanybydder in the 19th century was an important wool manufacturing centre in the upper Teifi valley. Today, a new mill is flourishing, housed in the old village school. Started in the tradition of the 'Welsh woollen industry', their aim has been to combine the old and the new. A wide variety of exclusively designed, subtle textured and blended woollen textiles are produced here. At the adjoining showrooms, cloth by the yard, rugs, scarves, bedspreads and clothes are sold.

Open: All year, Monday to Friday 09.00 – 17.00 hrs. Also Saturday in summer season.

Newtown, Powys.

The Royal Welsh Warehouse

Location: In Newtown town centre, by railway station.

Map 136 Ref. 11913

Until the last few years of the 18th century, Newtown was merely a market town but in a fairly short period it became a large-scale, textile producing centre. Yarn factories and weaving shops were established all over the town, which experienced periods of prosperity and depression. Pryce Jones, a leading figure in the industry, started the world's first mail order business in 1859 based entirely on Welsh flannel. His warehouse – The Royal Welsh – is still open to the public. Other buildings of interest include the Newtown Flannel Exchange, and the former weaving factory in Commercial Street.

A leaflet describing Newtown's woollen industry in greater detail has been published by Powys County Council, Llandrindod Wells.

Museum: Newtown's Textile Museum, in Commercial Street, has many reminders of the town's once prosperous industry.

Open: Easter to October, Tuesday to Saturday including Bank Holidays 14.00 – 16.30 hrs.

Right: Two engravings showing the traditional methods of spinning and weaving, before the introduction of the power loom and Spinning Jenny. Hand looms are again being used in some of Wales's craft workshops – for details obtain a copy of the Wales Tourist Board's guide to Crafts and Rural Industries.

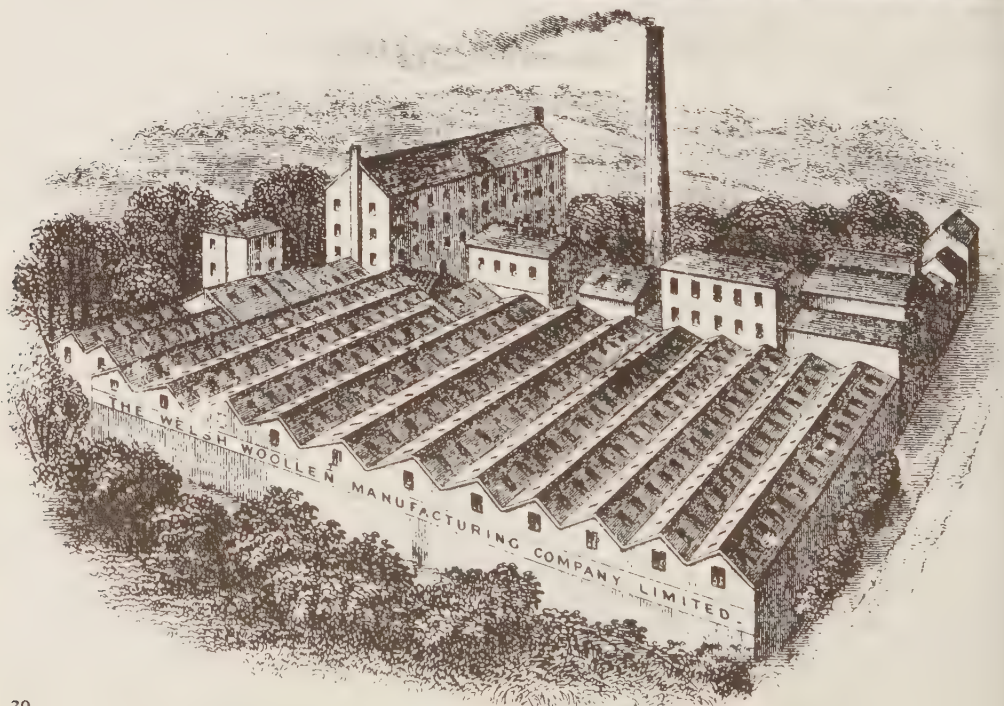
Below: This illustration of the former Canbrian Mills in Newtown (1860) shows the sheer scale of the town's once flourishing textiles industry.

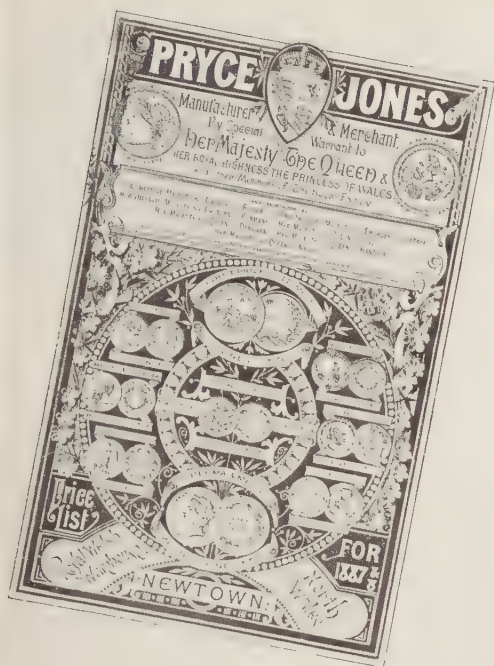
Penmachno, Betws-y-Coed, Gwynedd Penmachno Woollen Mill

Location: Between A5 road and Penmachno village on B4406, 1½ miles from Betws-y-Coed.

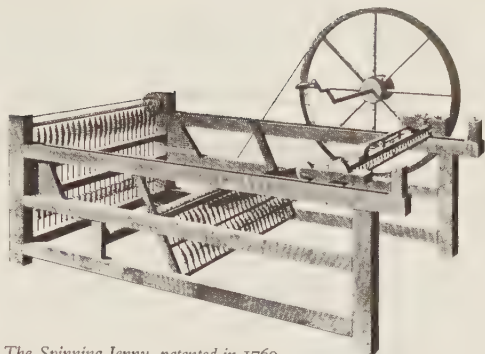
Penmachno Mill was a 'Pandy' (Welsh for fulling mill) in the 18th century, finishing cloth for many cottage weavers. It enjoyed its greatest prosperity under the ownership of Hannah Jones and her sons. They began to card, spin and weave the local wool, producing flannel for the shirts of local slate quarrymen and farmers. Today the production centres on tweed for ties and hats, brushed rug cloth and mohair wool for scarves and stoles, which are on sale in the Mill Shop. Just upstream is the weir which leads to the mill race, and the Machno Waterfalls. Fifty yards below, a medieval packhorse bridge spans the river gorge.

Open: Monday to Friday 9.00 – 17.00 hrs. Weekend also in summer.





Pryce Jones, the world's first mail order company, produced this attractive catalogue in 1887.



The Spinning Jenny, patented in 1769, became popular in the textile districts of Wales, particularly in the North, in the early 19th century.

St. Nicholas, Letterston, Haverfordwest, Dyfed.

Tregwynt Woollen Mill

Tel. St. Nicholas 225.

Location: Off A487, 5 miles south-west of Fishguard, near St. Nicholas.

Map 157 Ref. 893349

Tregwynt, which probably developed from an early fulling mill in the 18th century, has worked continuously ever since. Its attractive unspoilt location has changed very little over the years and the original source of power, the watercourse, can still be seen.

Open: Mill – weekdays 09.00 – 17.00 hrs. Shop only on Saturdays. Closed Sunday.

Solva, near St David's, Dyfed
Middle Mill

Location: Approximately 1 mile directly north of Solva, on minor road off A487.

Map 157 Ref. 807257

Middle Mill is inland from the coastal village of Solva which was once a flourishing port for the coal and lime trade. (The row of 19th century limekilns is featured in the coastal section of this guide).

The mill, moved from St David's, was established here in 1907 and today produces tweeds, rugs, blankets and all wool carpets.

Open: Daily, Monday to Saturday, 09.30 – 17.30 hrs. Ample parking.

Trefriw, near Llanrwst, Gwynedd.

Trefriw Woollen Mills

Tel. Llanrwst (0492) 640462.

Location: On B5106, 2 miles north of Llanrwst.

Map 115 Ref. 775632

The Vale of Conwy Woollen Mills had already been established here for many years when Mr. Thomas Williams, the great-grandfather of the present owners bought the mill as a going concern in 1859. Warping is now carried on in the third floor of the oldest building, which was the original fulling mill. Other buildings were added in the late 19th century, in 1945, and the latest building about ten years ago. Water from the River Crafnant is still used to drive the mill, but the old water-wheels were replaced by hydro-electric turbines at the beginning of the century, the present turbines having been in use for about 30 years. All processes from wileying, through carding, spinning, doubling, washing, dyeing, warping and weaving can be seen.

Open: Monday to Friday 07.45 – 12.00 hrs. and 13.00 – 16.45 hrs. Mill shop is open 08.00 – 16.45 hrs. Monday to Friday and Saturdays 10.00 – 16.00 hrs.

Tanygrisiau, near Blaenau Ffestiniog, Gwynedd.
Moelwyn Mill

Location: 200 yards from the Festiniog Railway Station at Tanygrisiau, near Blaenau Ffestiniog.

Map 115 Ref. 685451

Moelwyn Mill is an early water-powered fulling mill, probably established in the 18th century, or maybe earlier. Although work ceased here in 1964, the mill still houses a unique collection of original machinery, which is now being restored to working order.

Open: Every Wednesday and Thursday during school holidays, 14.30 – 16.30 hrs. Otherwise by prior written appointment (for groups & parties) to Gwynedd County Council, Planning Dept., County Offices, Caernafon, Gwynedd.

South-West Wales – from iron to tinplate

Next time you go to a supermarket, notice how tin cans are used for almost all food preserves. Velindre works, Llangyfelach near Swansea and Trostre Works, Llanelli, produce most of Britain's tin, using an electrolytic process on continuous soft steel coils produced at Abbey Works, Margam, Port Talbot. John Player and Son, a tiny tinplate works at Clydach, in the Swansea Valley, still use an old dipping process in the manufacture of a special kind of tinplate.

John Hanbury started making tinned plates at Pontypool in 1720 and by 1728 had perfected the art of rolling the iron plates instead of hammering them flat. By 1750 there was a tinplate works at Kidwelly; Melingriffith in Cardiff was at work by 1815 and in 1850, out of 35 tinplate works in Britain, 22 were in South Wales, many of them around Llanelli – hence the saucepans on top of the rugby goalposts at Stradey Park, Llanelli and the old song 'Sospan Fach' (The Little Saucepan) heard at rugby international matches in Wales.

Tinplate works developed around old ironworks and then close to steelworks when steel sheets replaced iron sheets in the making of tinplate. One may still find traces of the sites of early iron and tinplate works from the Vale of Neath to the Gwendraeth Valley.

Blaen-nant Colliery, at Crynant.



Remains of the Cwmgrwach Ironworks' engine house.

Aberdulais, near Tonna, West Glamorgan Dulais Iron Works

Location: 2 miles north-east of Neath on main A465 at roadside Dulais Rock Inn, Aberdulais. Walk into site by gateway alongside Old Age Pensioners' hall, opposite Esso garage, or view from beer garden of Dulais Rock Inn.

Map 170 Ref. 772994

This site, part of which has been recently excavated, has seen industrial activity of various kinds since the 16th century. The processes that developed included a corn mill, copperworks (established by the Mines Royal Company in 1584), an iron forge and latterly a tinplating works. The remains to be seen consist of a fine weir forming the uppermost part of the waterfalls, sluices, watercourses and a wheel pit. Since excavation, two reverberatory furnaces and metal slitting pits have been exposed. Lower downstream a single arch of stone spans the river – this is all that remains of a twin arched bridge which connected the site with the head of a short branch canal running from a point close to the Dulais Rock Inn to the Tennant Canal. Owned by National Trust.

Blaengwrach, West Glamorgan. Cwmgrwach Iron Works

Location: Turn off A465, 1 mile west of Glyn-neath by Aberpergwm Colliery to Blaengwrach. 100 yards beyond red brick Dunraven Arms in main street turn sharp left, immediately after crossing a brook, then right into Heol Wenallt. Park near Company Shop (new farm) and take unpaved track to left. After 20 yards, branch left through woodland behind house.

Map 170 Ref. 863050

Remains of iron works constructed in 1842, one of the first to use anthracite as the fuel in smelting iron. Engine house, rapidly crumbling. Base of former stack and high charging platform retaining wall. Twin tuyeres (used to inject the blast into furnaces) sticking from large block of slag to right of engine house. Former manager's house is now a farmhouse where to ask for a closer look than afforded from adjacent road.

Clydach, West Glamorgan.

John Player & Son, Ltd., Tinplate Works

Location: On east side of A4067, 1 mile north of Morriston exit from the M4. Turn down a short lane just as you enter Clydach from the south.

Map 159 Ref. 688008

Important: Only open by prior arrangement with Mr John Bellingham, Manager (Clydach 3330), as the tinplate section is still working.

This was formerly a water mill powered by the water of the Swansea Canal, which formerly adjoined the building. Seen in the yard is the water turbine, recently excavated. Mills driven by canal water were only ever constructed in Britain on the Neath and Swansea Canals, and it's believed there were 42 of them on the Swansea Canal alone.

At the works there are several items from the early 19th century, but the main section dates from 1882. Still operates a dipping process of tinplating. Several old cranes of wood and iron, travelling gantry crane of the 1880s. Old steam engine and original office furniture and pictures. Produces specialist tinplate.

Crynant, West Glamorgan. Cefn Coed Coal and Steam Centre

Location: On left side of A4109, 2 miles north of its junction with the A465. N.C.B. colliery car park on opposite side of road.

Map 170 Ref. 784033.

This centre, recently opened by West Glamorgan County Council, offers a unique opportunity to appreciate the development of coal mining in the Dulais Valley. When it was sunk in 1926 the Cefn Coed Colliery was the deepest anthracite mine in the world, with two shafts of 800 yards. To wind the cages up and down these shafts, carrying men, ponies and equipment into the pit and raising coal to the surface, two massive steam engines were installed, one of which has been restored as centrepiece of the museum. A suite of Lancashire boilers have also been restored as well as pithead gear, winders and a compressor. In the Main Gallery an exhibition traces the history of coal mining and mining techniques in the Dulais Valley and Cefn Coed Colliery. Equipment on display in the external exhibition area include drums, manriders and other machinery from the Graig Merthyr Colliery, Pontardulais.

Open: All year. Daily 10.30 – 18.00, excluding Tuesday and Wednesday. Please telephone Crynant 556 to confirm arrangements.

Cwmavon, West Glamorgan. Cwmavon Copperworks Flue

Location: By footpath on open spoil-covered mountain from near telephone kiosk at end of Heol Tabor, off Heol Mabon reached up hill via Heol y Parc, ½ mile north of Pantdu service station on B4286.

Map 170 Ref. 783930

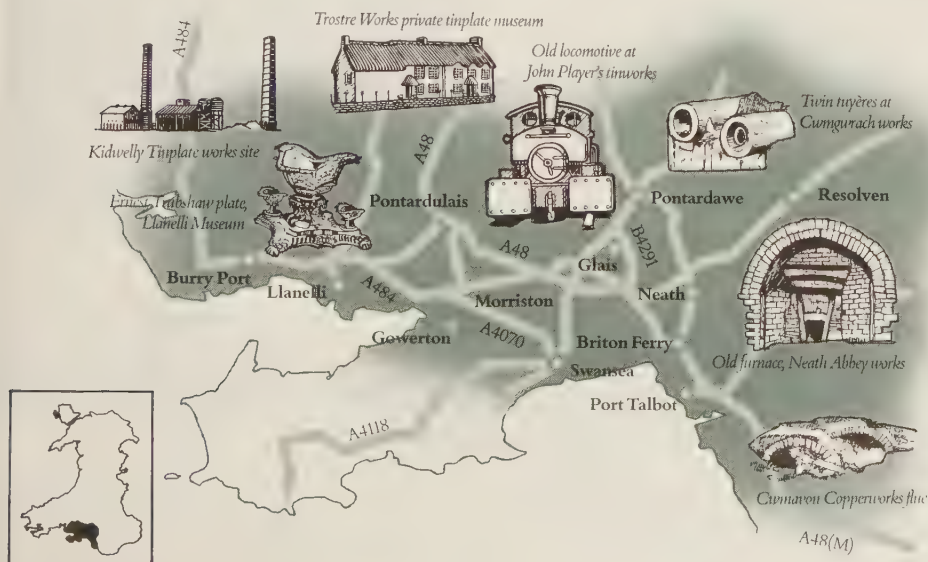
A stone culvert, extending from the valley's copper-works and carried in a soil-covered groove up the mountainside to a stack on the top of 1,200ft. high Foel Fynyddau, was built to remove poisonous fumes from the valley. Portions of finely worked rough stone arches remain, some uncovered. Fine views. Combine with a visit to Afan Argoed Country Park and Museum of the Mining Industry, 3 miles up the valley and inspection of the massive stone aqueduct crossing the valley at Pontrhydyfen.

Kidwelly, Dyfed. Kidwelly Tinplate Works

Location: 1 mile north-west of Kidwelly alongside Gwendraeth Fach river behind Gwennllian Hotel on a side road off the Kidwelly to Mynydd y Garreg road.

Map 159 Ref. 421079

Important: Can only be viewed from the side road. Two prominent chimney stacks mark the site. In the ruins of the works there are flywheels, rollers, a large "Foden" engine, cropping shears, and horizontal steam engines. The site has been purchased by the Llanelli Borough Council in the hope of establishing there a museum of the tinplate industry. Rebuilt in 1801, 'the oldest in the kingdom', says a plaque which was affixed to the gable end of an office building at the entrance to the site. The original forge was established in 1719 followed by 'tin mills' set up by Robert Morgan. Combined with a visit to Kidwelly castle and church, a visit to the area is worthwhile for a glimpse of an important site.



**Llanelli, Dyfed.
Parc Howard Museum**

Location: Turn left into Parc Howard Avenue from A476 town centre to Felinfoel and Llandeilo road $\frac{1}{2}$ mile north of town centre. Museum stands 200 yards from small car pull-in in grounds of park.

Map 159 Ref. 508013

Parc Howard, former home of old metal masters, has a small but illuminating display of old tinplating process and materials used. In this process steel was made in an open hearth furnace, cast into ingots and rolled into bars after being re-heated. In the tinplate 'hot mills' steel bars were rolled and re-rolled until they finally became packs of 8 sheets. They were then trimmed to required sizes, washed, pickled-cleaned in an acid bath and annealed – heated for tempering – rolled in 'cold rolls' and annealed once more – all essential processes before dipping the sheets in molten tin for cooling in sheets. Finally the sheets were cleaned and polished before being sorted for packing in what were known as 'basis boxes' before leaving the factories.

**Llanelli, Dyfed.
Trostre Tinplate Works museum in
former Trostre Farm**

Location: Turn south of A484 1 mile east of Llanelli towards conspicuous tinplate works of Trostre. Enter left at works entrance in about $\frac{1}{2}$ mile to works car park.

Map 159 Ref. 528997

Important: Visits only by prior arrangement with works manager, Mr. D. C. Williams, Tel. Llanelli 2260. Permission will be given only if the farm building is not in use for works functions.

Trostre Farm, re-thatched and dressed throughout as a typical Welsh farmhouse of the last century, houses a small but fascinating museum of the tinplate industry. Centrepiece is a large working model of the Eaglebush tinplate works, Neath. Other exhibits include the tinplate workers' dress, old prints, 'round-robins' and examples of tinplate use, including the first beer canned in tinplate for the nearby Felinfoel Brewery.

**Llansamlet, West Glamorgan.
Scott's Pit engine house and buildings**

Location: Can be seen from Gwernllwynchwyth Road, Heol Las, by turning north, $\frac{1}{2}$ mile west of the Llansamlet exit from M4 near Skewen. Pit $\frac{1}{2}$ mile on left.

Map 170 Ref. 698984.

The remains of a Cornish pumping engine house built in 1817–1819 to drain the workings of the pit sunk at the same period by John Scott, a London attorney. The pit was in production from 1819 to about 1840. The engine house and related buildings were restored by members of the South West Wales Industrial Archaeology Society between 1976 and 1980. The site is now the property of Swansea City Council.

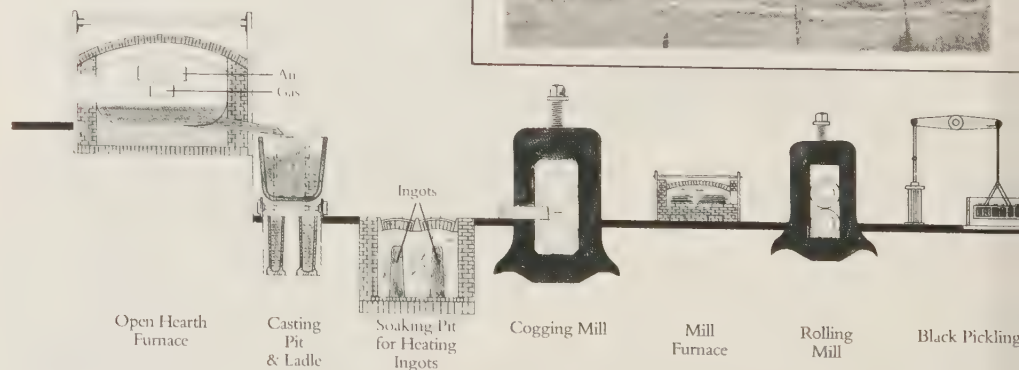
Industrial trails. A coal mining trail in the Llansamlet and Birchgrove area of Swansea, feature Scott's Pit and other sites of historical interest, including Smith's Canal, Samlet's Colliery and remains of the Round Pit. This is one of a series of leaflets on the industrial archaeology of the Swansea area, produced by the South West Wales Industrial Archaeology Society. Further information from the Hon. Secretary, W. I. Roberts, Grove Cottage, Gloucester Place, Mumbles, Swansea, West Glamorgan.

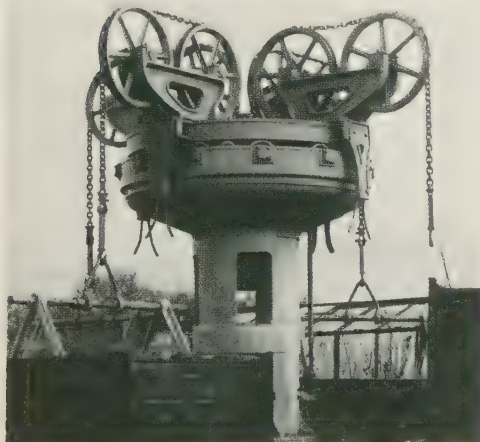
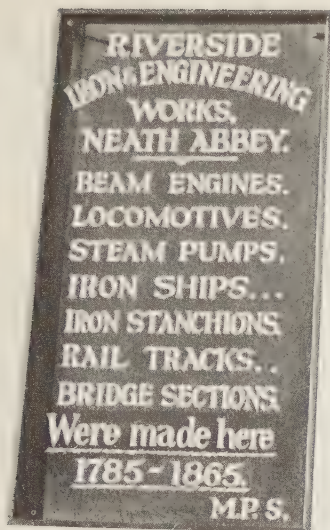
Scott's Pit, which can be seen from the road, $\frac{1}{2}$ mile west of the Skewen exit of the M4 (near Swansea).



The Tinplating Process

From a small but informative display at Llanelli's Parc Howard Museum.





Top: Neath's Abbey Works were very productive during the 19th century, manufacturing such items as locomotives, tracks, steam pumps and Beam Engines.

Above: A tin dipping machine, one of the outdoor exhibits at the Trostre Tinplate Works' private museum.

Neath, West Glamorgan. Neath Abbey Furnaces

Location: Follow signs to Neath Abbey remains $\frac{1}{4}$ mile west of Neath. On A465 nearby, first apply at a garage office of Matt Price & Sons Limited. Furnaces in yard at rear of their engineering works. Parties allowed to visit by prior arrangement. Tel. Neath 3665.

Map 170 Ref. 738977

Remains of two enormous blast furnaces 60 to 70ft. high in good condition. Old rolling mills, a waterfall and some sluices lie in valley above viaduct. Established as iron furnaces in 1792 by Quaker families from Cornwall; but copper smelting came to the area a few years earlier. There is some engineering work being done in the original Neath Abbey Ironworks' buildings.

Resolven, West Glamorgan. Melincourt Iron Forge and Furnace

Location: Take B4434 south-west from Resolven. Turn second left up steep Waterfall Road opposite a green-painted house with sign 'Neath Road' on it. Small pull-in in about 400 yards on left. Remains, opposite, slightly downhill. Owner at Glyn Gwilym Farm, Melincourt.

Map 170 Ref. 825018

The site of a charcoal using blast-furnace built in 1708 and closed in 1808 when the proprietor realised that he could not compete with coke-using furnaces. The site has recently been cleared and surveyed, exposing a secondary air furnace and wheel pits, in addition to the charge house wall and furnace section.

Cardiff, South Glamorgan.

Meltingriffith Tinplate Works water pump

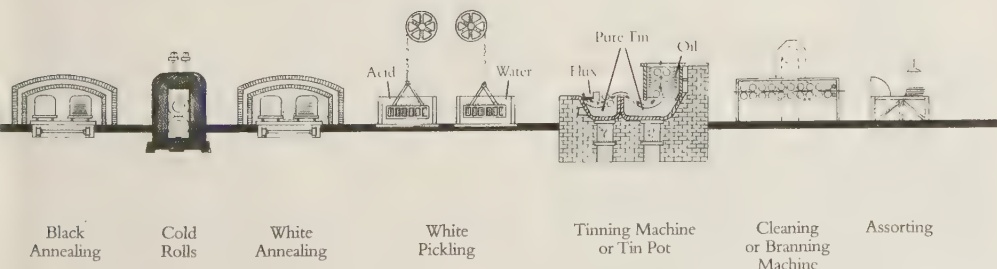
Location: Turn sharp left immediately north of Llandaff North railway station bridge on A4054, along The Parade and Westbourne Crescent, bear left down sharp hill then right. Wheel remains, preserved, are viewed through mesh fencing just behind a white cottage alongside lorry depot.

Map 171 Ref. 143799

A model at the National Museum of Wales in Cardiff shows how it worked, returning water from the feeder which drove the works, to the Glamorgan-shire Canal alongside. An undershot waterwheel, it drove timber rocking beams (removed) which operated pistons in two cylinders (which remain). On the site there are also substantial remains of tinplate works buildings. This important industrial monument, built in 1809, is being restored.

John Rennie and William Jessop were involved as engineer and contractor.

(Though not in the region of South-West Wales, it is worth including because of its association with the tinplate industry. (Ref. 142802)



Lower Swansea Valley Industrial Trail

The Lower Swansea Valley has a rich industrial past. Along the banks of the Tawe between Swansea and Morriston there was a concentration of industries, some of the remains of which can still be seen. It became the non-ferrous metal centre of the world, with the development of copper, zinc and nickel works in the early 19th century. This 3-hour long trail takes you over two and a half centuries and shows the city's original importance as an industrial centre.

The trail starts, appropriately, at the Royal Institution of South Wales, which has an industrial gallery, giving you a foretaste of the area's industrial history. The new Industrial and Maritime Museum is also based in a converted warehouse in the South Dock. From here proceed eastwards along Victoria Road to the roundabout, then along Fabian Way, past the old entrance to the North Dock.

Below: Vivian and Sons Engine Shed.

Bottom: Start of the trail, Swansea's Royal Institution.



(O.S. Map 159 in 1:50 000 series)

Weaver's Mill. Map Ref. 662932

This derelict building on your right once belonged to Weaver & Co., and was constructed by the French firm Hennebique – pioneers of reinforced concrete. It was completed in 1898 at a cost of nearly £4,800. Though often described as the ugliest building in Swansea, it has its place amongst the annals of civil engineering as Europe's first reinforced concrete building. (It stands as a monument to Swansea's former days as a flourishing port, when vessels from the grain producing countries of the world docked here. Behind the mill is the half-tide dock basin, commonly known as Weaver's Dock; here the grain was unloaded.

New Cut Bridge.

A short walk from the Weaver's Mill takes you to the New Cut Bridge. An iron swing bridge was erected here in 1897, to allow sailing boats to move up river as far as Morriston. This was removed in 1961–2, and replaced with the present dual carriageway. See plaque alongside the bridge.

From this position, you can see a number of interesting features.

Looking south, towards the sea, note the massive piers which once carried the Swansea and Neath railway. The bridge was designed to open to allow shipping through.

On the west bank of the New Cut, to the north of the bridge, note also the bollards, the nearest of which is inscribed 'Ynisedwyn Iron Works' – the name of the notable works at Ystradgynlais. Similarly marked bollards can be found on the docksides at Pembroke Dock, Milford Haven and Bristol.

St. Thomas Station to the Midland Railway Bridge.

From the bridge a footpath runs along the east bank of the New Cut channel, passing on the right the site of St. Thomas Station, opened in 1860. In 150 yards, you can see the remains of the two-masted barge – believed to be the Lady Quirk – which was engaged in the coal trade until about 1910.

Turning right up the low bank, in 300 yards, notice the foundations of a drawbridge which carried the Midland Railways Harbour Branch over the New Cut channel. Remains of the line can still be seen. From this path note on the opposite bank of the river the site of an old copper works, which was later leased to the Cambrian Pottery in the mid 18th century. Examples of their celebrated Porcelain Ware – now collectors' items – are exhibited at Swansea's Glynn Vivian Museum and Art Gallery.

From the Midland Railway bridge head north for about ½ mile alongside the railway, keeping off B.R. property. Coming into view on the right, on Kilvey Hill, is All Saints Church, endowed by the owners of the Middle Bank Copper Works.

Smith Canal. Map Ref. 664946

Just before the bridge, turn aside to the left to see the Smith Canal basin, which was named after John Smith, the coal-owner. It was opened in 1784 to serve his local collieries. Note the stone culvert which carries a stream over the canal at the northern end of the basin.

White Rock Copper Works.

Returning to the Railway Line, pass under a bridge, and view 150 yards on the left the site of the White Rock Copper Works – one of the five leading works in the Lower Swansea Valley – which accounted for half Britain's output of copper in the mid and late 19th century.

Vivian & Sons Engine Shed.

Across the river from this site is an Engine Shed which belonged to the Cornish family, Vivian and Sons. It still bears their initials. Some of the buildings of their Hafod Copper Works (1810–1924) can be seen further up the river.

Middle Bank Copper Works. Map Ref. 659948

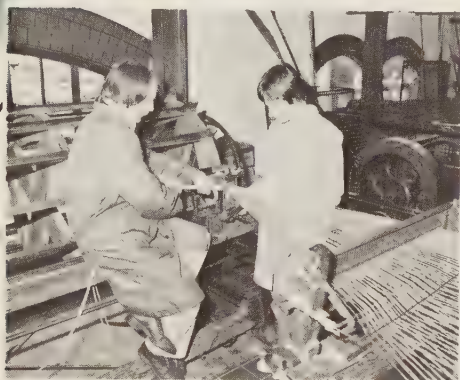
Continue northwards along the river bank, past the site of the Middle Bank Copper Works, crossing in a diagonal line towards the railway. Smiths Canal and the railway run parallel here. See the detailed booklet, available at local information centres, for more information.

Remains of the Upper Bank Zinc and Copper Works can be seen, incorporated into the Addis factory complex.

Note: This trail can be followed on foot



A working woollen mill is housed in Swansea's Maritime & Industrial Museum.



Morris Castle. Map Ref. 6510965

Following the road around the Addis Works, Morris Castle forms a striking feature on the skyline. It was built by John Morris, son of Robert Morris, founder of Morriston, as a castellated block of flats to house his colliery workers. It was a rectangular building, with four square towers around a central inner courtyard. Only the ruined wall of two of the towers remains.

Morfa Bridge. Map Ref. 665955

Erected in 1909, this is a fine example of an iron counter-balanced lifting bridge on timber supports, which is worked by means of a water tank. Although it is now fixed and cannot be raised, it still remains intact. Having crossed the bridge, note Morfa Quay, down river on the right bank, and the site of the Morfa Works.

William Siemens Laboratory. Map Ref. 662957
It was here at the Landore Steel Works in 1868 that William Siemens perfected the Siemens method of 'open hearth' steel-making. The building, with its tall chimneys, is a good example of an early experimental industrial laboratory. By 1873 the works had enlarged on land further up and across the river, and was an important steelworks, with a weekly output of 1,000 tons of steel.

Landore Quay. Map Ref. 665954 and **Railway Viaduct.** Map Ref. 663958

Turning right, walk under the viaduct to see the Quay, where ships brought the copper-ore to supply the Llangyfelach Copper Works.

The original wooden viaduct, carrying the South Wales Railway across the Tawe, was designed by Isambard Brunel. It was constructed between 1847 and 1850, almost entirely of creosoted pine, at a cost of £28,720, but was later replaced in 1888-9 by a metal structure supported by masonry piers.

All that remains of the old Brunel bridge are four or five masonry piers, which can be seen between the river and the filled-in canal.

Cynon Valley

Like most of the industrial valleys of South Wales, the Cynon Valley was, up until the early 18th century, still primarily a rural area of isolated farmsteads and uplands. But in the second half of the century it saw major changes, which were to influence the whole character and landscape of the valley. First came the ironworks, then the discovery of steam coal, which became known as the best in the world. By the late 19th century, Aberdare's pits alone were producing 2,000,000 tons of coal.

Many of the physical remains of the Industrial Revolution have been removed, but a number of significant and fascinating sites remain to form part of the valley's industrial heritage. They are all easily accessible to tourists.



Abercynon, Mid Glamorgan The Miners' Institute

Location: Just off the A470 trunk road at Abercynon.

Map 170 Ref. 079946

Workingmen's Institutes are as impressive as many of the massive chapels in the South Wales Valley towns – in terms of their size if not their architecture, often described as 'bizarre'. You just can't miss the multi-storeyed structure at Abercynon, dwarfing the rows of colourfully decorated terraced houses below. This was the 'mecca' for all local mineworkers, whose regular subscriptions built and maintained it. The institute, which served as both a cultural and leisure centre, played an important role in the community life of the coal mining towns.

Open: Exterior can be viewed at any time. Interior unimpressive.

Abercynon, Mid Glamorgan. The Glamorganshire Canal

Location: Along A4059, 16 miles north-west of Cardiff, by the Navigation Hotel. A car park is provided for hotel patrons.

Map 170 Ref. 085955

At present a fire station stands on the site of this former important Glamorganshire Canal Basin which was the terminus of the Penydarren Tramroad. The Navigation Hotel was originally the offices of the Glamorganshire Canal Company. At the Basin, Abercynon, note the Trevithick Memorial. This commemorates Richard Trevithick who drove the world's first steam locomotive from the Cyfarthfa Ironworks to the canal at Abercynon in 1804. This route can be followed on foot in parts. See page 37 for further details.



Guto Nyth Bran, the 18th century long-distance runner, reputedly ran over the mountain from his home near Llanwonno to fetch yeast, in the time it took his mother to boil the kettle.

Aberdare, Mid Glamorgan.

Dare Valley Country Park Industry Trail

Location: 1½ miles west of Aberdare town centre, on foot from St. John's Church, or by road (A4059) via Treccynon and Cwmdare, or from B4277 at Highland Place.

Map 170 Ref: 980025

The Dare Valley Country Park was created on largely derelict land, which once included about half a dozen collieries. The more unsightly scars of industry, including old coaltips, have been removed and the area attractively landscaped with trees. In addition to the many public rights of way within the park, there are four formalised waymarked trails, one of which is an Industry Trail, tracing the historical development of coal-mining in the area.

The trail starts in Aberdare town, and for most of its length follows the route of the old Dare Valley Railway. Of particular interest are the remains of Brunel's timber viaduct and the modern pit headgear at the old Bwllfa No. 2 Colliery, still necessary for as long as mining continues in the lower end of the valley.

An illustrated leaflet with map is available from the Park Warden's Office.

Open: At any reasonable time.

Aberdare, Mid Glamorgan.

Head of the Glamorganshire Canal

Location: Off A4059, by Ynys Sports Centre.

Iron and later coal was carried along the Glamorganshire Canal, via Abercynon to the port of Cardiff. Only recently restored and landscaped, the head of the Aberdare Canal here was originally linked to the tramway from the early 19th century ironworks at Llwydcoed and Abernant.

Open: Can be viewed at any time.

Robertstown, near Aberdare, Mid Glamorgan.

Cast Iron Bridge

Location: Off A4059 at Treccynon, down Meirion Street, opposite Aberdare Park.

Built in 1811 to carry a tramroad across Afon Cynon, this part of Aberdare (and Hirwaun) had the benefit of two major outlets, the Aberdare Canal to its junction with the Glamorganshire Canal at Abercynon and the head of the Neath Canal at Glyn-neath. The bridge is supported on four cast-iron arched ribs. An interesting feature worth noting is the specially ridged metal walkway along the centre of the bridge which prevented the horses, which hauled the trams, from slipping.

Open: Can be viewed at any time.

Mountain Ash, Mid Glamorgan.

The Waddle Fan, Abergorki Colliery

Location: At Nixon's North Pit at the former Abergorki Colliery, on A4059 Cardiff Road, Mountain Ash.

Map 170 Ref: 050990

In the 1870s the Waddle Fan was adopted as a means of ventilation at a number of coal mines. Made by a Llanelli company, this is one of two remaining on site in South Wales Coalfield. The other is at the old Clydach Colliery at Craig Cefn Park, in the Swansea Valley.

The fans, normally up to 45ft. in diameter, operated by steam and later electricity. They sucked in air as they rotated by means of two parallel discs, with a hollow centre, connected to the top of the shaft by a large pipe. The air was then expelled on the fan's periphery.

Open: By appointment only with the Area Estates Manager, N.C.B., Coal House, Ty Glas, Llanishen, Cardiff.

Alun Lewis 1915-44

Alun Lewis, the war poet, in his poem 'The Mountain over Aberdare', wrote of:

'The drab streets strung
across the cwm,
Derelict workings, tips
of slag
The gossellers and
gamblers use
And children scrutinig
for coal.'

With the creation of the Dare Valley Country Park in Aberdare much of this industrial landscape has gone - 'the derelict workings and tips of slag' having been replaced by green fields and fresh new woodlands, which provide recreational facilities for all the family - including walking, fishing and horse riding. The above memorial to Alun Lewis can be seen in Aberdare Library.



Ironworks in Mid Glamorgan. The Gadlys

Ironworks, at Aberdare whose engine house is now used by the Cynon Valley Borough Council for storage, is one of a number of ironworks featured in a new leaflet produced by Mid Glamorgan County Council. Entitled 'Ironworks in Mid Glamorgan', this leaflet is available, price 15p (plus postage) from their Planning Department, in Greyfriars Road, Cardiff CF1 3LG.

The Waddle Ventilating Fan at Abergorky Colliery, Mountain Ash.



Rhymney Valley

Remains of an old blast furnace, a Company Shop and a row of carefully planned ironworkers' cottages are but a few of the many landmarks of the Rhymney Valley's rich industrial past. Rows upon rows of colourful terraced houses, often carved into the hillsides, are a dominant feature of the landscape here, dating mostly from the late Victorian and Edwardian era (1875-1910). In many of the towns and villages you'll find there's a pub whose name reflects the valley's dependence on the coal and iron industries. For example, the 'Coal Hole' at Gellihaaf or the 'Blast Furnace' at Pontlottyn.

Coal has been worked in the valley for centuries, although the industry wasn't fully developed until the industrial development of the 18th century, when Rhymney became a major iron producing centre, with three ironworks established in the town by 1825. The discovery of coal at the Roman fort of Gelligaer seems to suggest that it was even worked during that period.

When the Powell Dyffryn Company was formed in 1864, the industry entered a period of even greater expansion in the Rhymney Valley. Although many collieries have since closed, a few are still working, including the Penallta, near Hengoed.

Rhymney's Ironworks and Company Shop

Location: The ironworks are adjacent to the Three Counties Club, on A469 north of Rhymney, while the Company Shop is part of the old Rhymney Brewery site. (Also accessible from A465).

Map 161 Ref. 109091

This was the first of three ironworks established at Rhymney in the early years of the 19th century. Few visual remains of the works are left - other than the ruins of the blast furnace hearth. But in part of the Rhymney Brewery Complex - once owned by the Rhymney Iron Company - the last surviving truck

Former colliery winding sheaves, now set in stone, near Rhymney.



shop in Wales is to be found. It had departments for grocery, drapery, ironmongery, furniture – even its own bakery and slaughterhouse. Built in 1839, it operated until 1885, fifty years after the passing of the Anti Truck Act of 1831. Note the overhanging eaves – in the same style as the workers' housing at Drennewydd.

Open: The exterior can be viewed at any time.

While in Rhymney, it is also worth noting the Puddlers' Arms and The Blast Furnace at nearby Pontlottyn – two pubs which show the valley's industrial past. (Puddlers were the most skillful class of workers in the Ironworks.) St. David's Church, also in Rhymney, was built for the Rhymney Iron Company. Its 'sad bells' are recalled in 'Gwalia Deserta' by the local poet Idris Davies.

Butetown, Rhymney, Mid Glamorgan. **Butetown**

Location: On the B4257, 2 miles north-west of Rhymney. (Just off A465). Car park provided.

Map 161 Ref. 104092

Butetown, otherwise known as Drennewydd, is an interesting example of an early model village. There are three parallel terraces, all stone built, with attractive stone tile roofing, in two storeys, although their central blocks are a storey higher, making them architecturally more appealing. They were built around 1802–3 to house the workers of the nearby Union Ironworks, and are said to have been designed by the works' manager.

As part of the valley's contribution to European Architectural Heritage Year, in 1975, Butetown has been carefully and sympathetically restored.

Open: Exteriors may be viewed at any time. Interiors only by appointment with the owners.

Hengoed, near Caerphilly, Mid Glamorgan. **Maesycwmmwr Viaduct**

Location: By the A4049, about 5 miles north of Caerphilly.

Map 171 Ref. 155949

One of the valley's most outstanding industrial monuments must be the 15-arched, stone-built viaduct at Hengoed. It was designed in 1857 by Charles Liddell, to carry the Newport, Abergavenny and Hereford Railway across the valley.

Beneath the towering arches on the south side of Maesycwmmwr, there's an attractive woollen mill – an unexpected survival from the 18th century, in a lovely, almost pastoral setting. (Private land.) Originally a corn-mill, it was later used as a wool-sorting house – still its function today.

Open: The viaduct can be viewed at any time, but not the mill – which is private property.

New Tredegar, Mid Glamorgan. **Elliot Colliery**

Location: Off A4049 on minor road, just south of town centre, opposite Health Centre.

Map 171 Ref. 144028

New Tredegar is a typical mining village, though, as in many others, the actual colliery has closed. Following recent land reclamation work, most traces of the Elliot Colliery have been removed, but an important winding house and steam winding

engine have been preserved at the East Pit.

The stone built engine house, dated 1891, is in the guardianship of the Secretary of State for Wales. (Visitors interested in viewing the engine – a twin tandem compound engine – should contact the National Museum of Wales, Cardiff.)

Rudry, near Caerphilly, Mid Glamorgan **Rudry Common**

Location: About 2½ miles east of Caerphilly town centre.

Map 171 Ref. 185866

Rudry Common is on the southern edge of the South Wales coalfield. Coal was worked here between the site of the present car parks and Rudry mountain from the 14th century. To the south and east of the wood are the remains of one of the collieries of the Rudry Brickworks of Nicholas and Johnson. (Ref. 187867.) From the colliery a tramway can be followed across the site of the Rudry Brickworks (Ref. 193873) and Garth Place, built to house the workers and their families.

There are many attractive walks in this area, with picnic sites provided at Ref. 206864 and 205855.

Leaflet available from Mid Glamorgan Planning Dept., Greyfriars Road, Cardiff.

Ystrad Mynach, Mid Glamorgan **Ystrad Mill and Smithy**

Location: On A469, 1 mile south of Ystrad Mynach.

Map 171 Ref. 145929

Few working smithies survive in Wales, yet here in the Rhymney Valley we have a thriving workshop, adjacent to a corn mill now being restored, possibly as a tourist attraction.

Open: With owner, Mr. John West's, permission.

The blacksmith's traditional workshop, at Ystrad Mynach.



Rhondda

The history of the Valleys was one of industrial triumph, in its remarkable output of coal of world renown, and social tragedy in the many disasters which befell those who worked below ground and their families. Only a few industrial monuments have survived to tell of the mining achievements, but the disasters of the pits will always remain etched in the history of two valleys, turbulent at times, yet always special to the industrial heritage of Wales.

Rhondda is best seen from the viewpoints listed here. Pentre is typical so you should be able to pick out similar features from whichever view you choose:

Colliery sites, slag trails to the mountain tops, the local quarry, coal levels to the hillside outcrops, as well as the new light engineering factories in the cleared sites. At first sight the Rhondda seems to be a single entity comprised of a continuous ribbon of housing running northwards from Porth into the Rhondda Fawr and Rhondda Fach. Closer inspection, however, reveals that the valley consists of a series of pit villages which, because of the physical restrictions, could only spread along the valley floor.

Your viewpoint in Ton Pentre is at the heart of the Rhondda Valley, where the tradition of choral singing is still strong. Include in your tour of the valleys a visit to evening choral practice with the Treorchy or Pendyrus Male Voice Choirs. (Details from Tourist Information Centres).

Blaenrhondda viewpoint

Location: Near 'S' bend on A4061 mountain route, 1 mile by road north of Treherbert.

Map 170 Ref. 934995

Just below the viewpoint, a rectangular reservoir exchanges surplus and needed water by pipeline through the mountain with Llyn Fawr, 2½ miles north. Below it is Blaenrhondda, once a mining village but now a designated Conservation Area. Beyond is Blaen y Cwm; the mouth of the railway's 1.98 miles tunnel, now closed, to the Afan Valley is clearly seen. Between Blaenrhondda and Blaen y Cwm are the remaining buildings of Ty-draw Colliery. The farm in the trees at Blaen y Cwm is a noted pony trekking and riding centre. On the hillside to S.S.W. are three rows of levels to the coal outcrops. Beyond is 'Mynydd y Cracs', the cracked mountain, or Mynydd Tyle-coch, distorted by the Rhondda Fault that broke the heart and purse of many a coal owner.

Penrhys viewpoint

Location: Side road by Statue of Virgin at crest of hill on B4512 between Ystrad in Rhondda Fawr and Pontygwaith in Rhondda Fach.

Map 170 Ref. 002945

On the hillside at your feet is a scheduled historic monument, St. Mary's Well, Penrhys, revered by Catholics. Across the valley are Glynconnel archery ranges, Glynconnel House, and at reference point 988945, Forestry Commission picnic site. To the south lie Llwynypia, Tonypandy and Penygraig.

Porth viewpoint

Location: Leave A4225, just north of Porth Station, about a 100 yards from where it divides on a railway bridge, and go east past a telephone box up a side street, zig zagging uphill to a concreted area near the entrance to round mushroom shaped water storage tanks.

Map 170 Ref. 029916

Views south to Cymmer, Mynydd y Cymmer tips and quarries, Bronwydd House (Borough Council); views west to Tynewydd Colliery Pit site, flooded in April 1877, by water from nearby Upper Cymmer Colliery (Pwll Hindes, sunk 1851).





Miners' brass tobacco boxes, part of Bill Richards' display of mining bric-a-brac at his shop in 89 Dunraven Street, Tonyypandy, in the Rhondda Valley. Other exhibits include lamps, helmets, explosives, containers, and a souvenir mirror of one of the Rhondda's former collieries, (for sale).

Hopkinstown, near Pontypridd, Mid Glamorgan Hetty Shaft Winding House at Ty Mawr Colliery

Location: On A4225, $\frac{1}{2}$ mile NW of Pontypridd.

Map 170 Ref. 054909

It houses a steam winding engine made by Barclay & Cope 1875.

It can be viewed from the site of the tramroad constructed by Walter Coffin of Bridgend about 1815 to carry the first coals to be deep-mined in the Rhondda.

Rhondda, Mid Glamorgan.

A changing landscape - Pentre

Location: View from Ton Pentre, on B4223 $\frac{1}{2}$ mile south of the junction with A4061.

Map 170 Ref. 965958

Dominating the centre of the scene is St. Peter's Church (1). Behind it the old road (2) to the Rhondda Fach plods its way over 1,577ft. Cefn y Rhondda (3). Before industrialisation, it is said, a squirrel could go from tree to tree the whole length of the valley. Tyn y bedw Colliery site (4) called locally 'The Swamp', has been cleared, but its slag heaps mark the hillside (5). They are reddish, as fire in the heaps has destroyed all soft material. Out-of-work miners in the depression years pock-marked (6) the coal outcrops. (At Tynewydd, Treherbert (Ref. 934985) there is a marked series in three rows). Rows of Forestry Commission pine trees (7) show the emerging forest which will be served by the new zig-zag road (8). Goalposts on playing fields almost mark the site of the pithead gear of the Pentre Pit, closed in 1959. The buildings which remain became Pentre Boys Club (10), and the Cory Band practice room (11). Behind them is the former Pentre Brewery. Pentre Colliery's spoil trail (12) up the mountain forms a cross of Lorraine. The Willis Quarry marks the skyline (13). Other quarries, providing stone for buildings at their respective pits, were the Pentre Pit Quarry (14) and the Tyn y Bedw Pit Quarry on Moel Cadwgan (14). The Willis quarry provided stone for Pentre Grammar School (15), as it was, and housing typified by the two rows of Y Moel cottages (16). Since a slip (17) at Pentre, in 1916, the valley's main road (A4058) has had an alternative, B4223 (your viewpoint). The railway, formerly the Taff Vale Railway, absolutely straight for 2.8 miles from Treherbert to Pentre (18), shares the valley bottom with Afon Rhondda; acidic water, with iron in solution, from old mine workings, stains the waters orange, sterilising plant growth along its banks. Rhondda Borough Council Offices (19), were built of Pennant sandstone, dressed on the spot, in 1882 by stonemasons at 4d. per hour. Beneath your feet the earth is a warren of tunnels, gradually settling. In the foreground, Llywelyn and Cubitt's steam locomotive works and foundry of last century is now the Territorial Army Drill Hall (20).



Merthyr Tydfil

Merthyr Tydfil, one of Wales's most historic industrial towns, in the second half of the 18th century was on the way to becoming the world's largest iron-manufacturing centre. Here too, Richard Trevithick, working as an engineer at Penydarren, succeeded in 1804 in running the first steam locomotive on the tramroad track between Merthyr and Abercynon.

The first of the great ironworks was that of John Guest, established at Dowlais in 1759, followed by the Crawshays' at Cyfarthfa in 1765, Hill's Plymouth Works in 1767, and Homfray's Penydarren Works, in 1784. By 1840 Dowlais was the largest ironworks in the world, employing 10,000 people.

Coal was not fully exploited until the second quarter of the 19th century; but it was still part of the iron industry. As it later became a major industry in its own right, small villages around the Merthyr area also expanded.

Many of the relics of Merthyr Tydfil's Industrial Revolution can still be seen – although the reminders of the poor social conditions are slowly being eradicated.

Our trail is intended to give you just a glimpse of Merthyr Tydfil's industrial past. There are many more sites worthy of mention, but for reasons of public access and safety cannot be included here.

Compare the Gothic style and grandness of Cyfarthfa Castle, built in 1824–5 for ironmaster William Crawshay, with the small ironworkers' cottages in Chapel Row, Merthyr Tydfil. Unlike the Coal Owners, who built their mansions away from the source of their wealth, Crawshay chose to overlook his vast empire, the Cyfarthfa Ironworks.



Lady Charlotte Guest, translator of the 'Mabinogion' and wife of the local ironmaster, ran a school on the upper floor of the Dowlais Stables. The building is to be restored, and Merthyr Tydfil Heritage Trust are preparing plans for alternative use.

Cefn-Coed Viaduct

Location: 200 yards west of A470 at Cefn Coed. For a good view take A465 Heads of the Valleys Road, or walk to Cefn Cilsanws Mountain.

Map 160 Ref. 031076

Cefn Viaduct, 725ft. long, is the third largest in Wales, and shows the engineering skills and workmanship of the Victorians at their best. It was built by Savin and Ward in 1866 to carry the Merthyr – Brecon railway over the Taf Fawr river. Alexander Sutherland, a friend of Richard Crawshay, one of the 'iron-masters' of Merthyr Tydfil, was the designer; and, in fact, he built the viaduct in a graceful curve to avoid crossing another iron-master's land. The viaduct has 15 arches, at a maximum height of 115ft., built of stone – with bricks underneath, because of a strike by stonemasons during its construction!

Pontsarn Viaduct

Location: On Vaynor Road, 1½ miles north-east of Cefn-Coed-y-Cymmer.

Map 160 Ref. 045100

Though smaller than its near neighbour at Cefn-Coed, the Pontsarn viaduct is yet another splendid example of Victorian railway architecture. It is 450ft. long, with seven arches, and carried the Merthyr – Brecon line 90ft. over the Taf Fechan river. It was built in 1866 by the same engineers who constructed the Cefn Coed Viaduct to Sutherland's design.

To get a closer look at both viaducts, you can walk from one to the other, along the disused railway line – a distance of about 1½ miles.

While at Vaynor it's worth visiting the graveyard of the parish church to see the unusual but perhaps appropriate epitaph to Robert Thompson Crawshay – the 'iron king' (1817–79) – it says . . . 'God forgive me'.



Pont-y-Cafnau Bridge and Cyfarthfa

Ironworks

Location: 1 mile north-west of Merthyr town centre, to the east of A4102 (Swansea road), turn-off at Cyfarthfa Industrial Estate.

Map 160 Ref. 037071

Little remains of the Cyfarthfa Ironworks, one of the greatest in the world, except for the ruins of some blast furnaces to be seen to the west of the access road. Part of the original site has been used for industrial development.

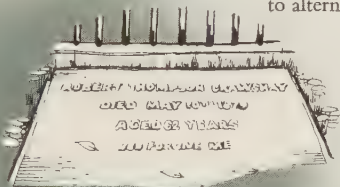
The works closed in 1910, briefly re-opening during the First World War, before being finally dismantled. Paintings by Penry Williams in the Cyfarthfa Museum show how the works once looked.

Pont-y-Cafnau, just north of the site, is a cast iron bridge, probably built in 1792 to carry limestone from Gurnos Quarry to the Cyfarthfa Ironworks.



Cefn Coed Viaduct

A465



The Ironmaster's grave at Vaynor Churchyard



Cefn-coed-y-cymmer

Gurnos

Cyfarthfa Castle

A4102

Ynysfach Ironworks

Merthyr Tydfil

Penydarren

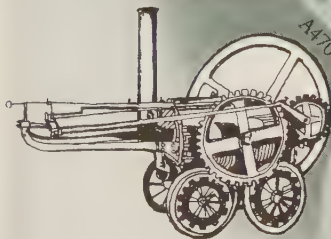
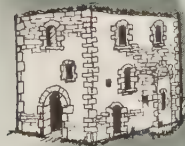
Dowlais Stables

Chapel Row

A4102

Dowlais

A4060



Model of Trevithick's steam engine



Canopy of the Lucy Thomas Fountain

Cyfarthfa Castle

Location: 1 mile north-west of Merthyr town centre, just off A470 Merthyr-Brecon trunk road.

Map 160 Ref. 041073

William Crawshay II, one of the famous Merthyr ironmasters, built this castellated house in Gothic style in 1824-5 at a cost of £30,000. It's quite an impressive building, set in beautiful parkland, overlooking a lake which supplied the Cyfarthfa Ironworks nearby. The castle favoured the ironmaster with a vantage point from which to view his industrial empire.

Cyfarthfa Castle now houses the town's museum and art gallery, which boasts a wealth of relics from this iron producing centre, as well as a collection of 19th century paintings and water colours.

Open: Daily, including weekends and Bank Holidays (Tel. Merthyr Tydfil 312), 10.00 - 13.00 hrs, 14.00 - 18.30 hrs April to September. 10.00 - 13.00 hrs, 14.00 - 17.00 hrs October to March. Sundays, 14.00 - 17.00 hrs. throughout the year.

Merthyr Tydfil Iron Trail. Mid Glamorgan County Council have produced a useful little illustrated leaflet outlining the history of the iron industry in Merthyr Tydfil. The major ironworks, even those now obliterated from the landscape, are described here. Available, price 15p (plus postage), from Mid Glamorgan County Council, Planning Department, County Council Offices, Greyfriars Road, Cardiff.

Chapel Row

Location: $\frac{1}{4}$ mile north-west of Merthyr town centre, adjoining Bus Garage to east of A470.

Map 160 Ref. 044060

This small row of two-storey terraced houses of the late 18th century stands between Georgetown and the River Taf. Originally, the Glamorganshire Canal, finally completed in 1794, terminated here. At the end of the row, adjacent to No. 1, are the ruins of the ironworkers' chapel, built in 1788 by the Crawshay family. Its octagonal design is unusual, while the masonry, with white limestone archways, was typical of the style of buildings at the ironworks. It was later used as a storehouse.

Chapel Row (No. 4) also has an important place in Welsh history – as the birthplace of Joseph Parry, one of the most prolific of Welsh composers and a leading figure in Victorian musical life. The cottage is now the headquarters of the Merthyr Tydfil Heritage Trust.

Ynysfach Ironworks

Location: $\frac{1}{4}$ mile west of Merthyr town centre, adjacent to the College of Further Education.

Map 160 Ref. 045057

The Ynysfach Ironworks were founded in 1801 as a subsidiary of the Cyfarthfa Ironworks. The most significant remains include a tall stone engine house, which is a splendid example of early 19th century industrial architecture. It is constructed of sandstone, with its round-headed arches in white limestone. This distinctive style was characteristic of all the Crawshay buildings.

Four furnaces are also visible, although they have been bricked-up, and there are also remains of a blast culvert on the furnace bank.

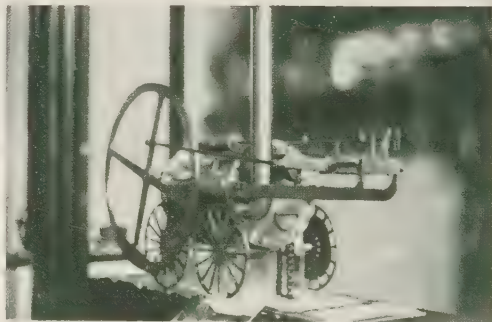
Open: Site accessible at any reasonable time.

Right: Model of Richard Trevithick's steam locomotive, at the museum in Cyfarthfa Castle. The Cornish engineer drove the world's first steam locomotive from the Cyfarthfa Ironworks to the canal at Abercynon, pulling five wagons and carrying ten tons of freight and 70 men. This historic journey took place in February 1804.

Below: 'The Rolling Mills, Merthyr Tydfil 1817', a water-colour from the National Museum of Wales, Cardiff.



Joseph Parry, the prolific 19th century composer, was born at No. 4 Chapel Row, Georgetown, Merthyr Tydfil in 1841. When he was 9 years old he worked in a local coal pit, but joined his father three years later in the foundry of the nearby Cyfarthfa Ironworks. The family emigrated to Pennsylvania in 1854 where he worked in rolling mills, before developing his musical career in the USA and in Wales. A small museum is being established at the restored No. 4 Chapel Row.
Open: All year, Monday to Friday, 12.00 – 16.00 hrs. or by appointment with the Research Officer. (Tel. Merthyr Tydfil 73117).





Above: In the industrial valleys of South Wales there are some good examples of railway architecture. Pictured here is the Cefn Coed Viaduct which carried the Brecon and Merthyr Railway across the Taff Fawr Valley.

The Robert and Lucy Thomas Fountain

Location: At the roundabout junction of A470 and A4102, near town centre.

Map 160 Ref. 051057

This unusual, ornate cast iron fountain canopy was erected by Sir William Thomas Lewis and William Thomas Rees of Aberdare in 1907 to commemorate Robert and Lucy Thomas, the pioneers, in 1828, of the export of South Wales steam coal. Ironically, it was made in Glasgow for the former iron capital of the world.

In 1826 Robert Thomas had struck the famous '4ft. seam' at his level, near Abercanaid; Lucy, his wife, later began selling the coal further afield, which started the Welsh coal export trade.

Penydarren Tramroad

Location: Immediately west of A470 trunk road at Quakers Yard, near Merthyr Tydfil. Approach 'Woodlands' housing estate, and turn under railway viaduct.

Map 170 Ref. 083966

The Penydarren Tramroad, built by the ironmasters, was opened in 1802. It was built to by-pass the many locks on the Glamorganshire Canal between Abercynon and Merthyr which slowed up the transport of finished iron. It is probably one of Wales's most significant industrial historic routes. It was along this tramway that Richard Trevithick, in 1804, drove the world's first steam locomotive.

Lengthy sections of the original 10 mile route can still be followed including about 1 mile, running between the Pontygwaith Bridge and Quaker's Yard, still in reasonable condition, and also between Abercynon (085950) and Quaker's Yard (097965).

Penydarren Tramroad Tunnels

Location: $\frac{1}{2}$ mile south of Merthyr's town centre, to the rear of 'W. H. Baker's' garage, to the east of the A470 trunk road.

Map 170 Ref. 055048

In 1804 Richard Trevithick drove the world's first

This Victorian cast-iron fountain canopy is a memorial to Robert and Lucy Thomas, pioneers of the steam-coal trade.



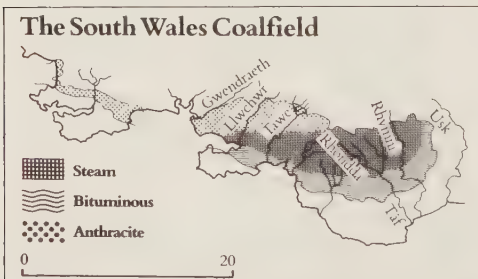
high-pressure steam locomotive through these tunnels which formed part of the Penydarren Tramroad, built to link the ironworks with the Glamorganshire Canal at Abercynon.

A memorial to Trevithick, incorporating stone sleepers and iron rails from Homfray's original tramroad can also be seen on the Penydarren Road, at Merthyr Tydfil.

Walks in the South Wales Coalfield

The South Wales coalfield, an area of about 900 square miles, stretches from Pontypool in the east to St. Bride's Bay, on the Pembrokeshire Coast, in the west. It consists of many layers or seams of coal, in different thicknesses and quality varying from the bright, hard anthracite, found in the west, to the steam coal, which fuelled the Steam Age, in the middle of the coalfield.

Timber from the surrounding hillsides provided charcoal for iron-making. It was later replaced by coal for making into coke, when the Coalbrookdale pioneer, Abraham Darby's method was adopted by the South Wales ironmasters. With this new-found use for coal and the change-over from water-power to steam-power the rich resources of the coalfield were exploited, drastically changing the landscape and the way of life in many parts of South Wales.



Coal miner's cottage interior, re-created at the Welsh Miners' Museum.



Abertillery, Gwent.

Abertillery Town Trail

Location: On A467, about 15 miles north-west of Newport, or 6 miles south of Brynmawr.

Map 171 Ref. 218041

In common with many of the towns in the Gwent valleys, Abertillery grew to be a major commercial centre in the late 19th and early 20th centuries, as the coal industry grew. This waymarked walk, with its six major viewpoints, illustrates the development of a once rural valley, which changed considerably with the coming of industrialisation.

Start: At viewpoint A on Aberbeeg Road. An illustrated leaflet is available at the town's museum, housed in the Library complex.

Gilfach Goch, Mid Glamorgan.

Gilfach Goch Industrial Trail

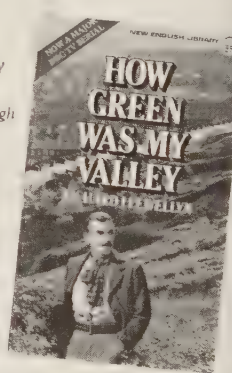
Location: 6 miles north-west of Llantrisant, off A4093.

Map 170 Ref. 983895

Viewers of the television serial based on Richard Llewelyn's book *How Green Was My Valley*, may recognise some of the scenes along this industrial trail of Gilfach Goch. Although only a small coal-mining valley, now landscaped, it has a rich industrial heritage, interpreted on the trail which starts at the site of the former Six Bells Hotel, on the B4564. It is two miles long, but shorter trails are possible by using alternative return routes. Interpretative panels depicting the history of the valley are located at various points along the route.

"How Green Was My Valley", by Richard Llewelyn, is available in paperback form, published by the New English Library, from leading booksellers and newsagents in Wales. Though the story is fictional, this popular novel does give a picture of life in a typical coal-mining village in the 19th century.

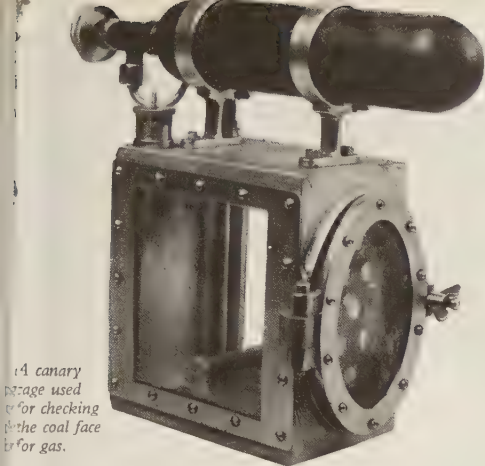
A tour based on the novel is arranged by the Cardiff Travel Centre for groups of 20 or more. As well as visiting sites associated with the book, visitors may get an opportunity to meet one of the "characters" from the T.V. series. See pages 61-2 for further details.



Guided Walks in the South Wales Coalfield

The industrial heritage of the Pembrokeshire Coast and the Brecon Beacons National Parks are featured in their programmes of guided walks, details of which are available from the respective information centres at Kingsmoor Common, Kilgetty, near Saundersfoot, Dyfed (Tel. Saundersfoot 813672) and 7 Glamorgan Street, Brecon, Powys (Tel. Brecon 2763). These walks, to suit all ages, are led by knowledgeable guides.

Further guided walks are arranged at regular intervals by the Welsh Miners Museum at Cymer in the Afan Argoed Country Park (Tel. Cymer 564), Torfaen Museum Trust (See page 43) and Gwent County Council's Planning Department (See page 40-5).



A canary cage used for checking the coal face for gas.

Walks in the West Glamorgan Valleys

An excellent series of trails has been devised by the South West Wales Industrial Archaeology Society, in conjunction with Swansea City Council. The Lower Swansea Valley Trail and the Llansamlet/Birchgrove Trail have already been mentioned. Others in the series include: The Clyne Valley Trail, The Morris Town Trail, Cwmbwrla/Forestfach Trail, Mumbles Trail, High Street/Hafod Trail, and the Gwerton/Penclawdd Trail. Available from Information Office, Swansea City Council, Guildhall, Swansea. In addition West Glamorgan County Planning Department have done extensive work establishing trails in other parts of the county. Of particular interest are the Tonna Trail, mentioned on page 55, the Rheola Forest Drive which takes in some fascinating sites in the Neath, Dulais and Upper Swansea Valleys, the Cwmllynwyd Wood Nature Reserve, featuring about thirty Bell Pits (Ref. 610946). *Tramroad Walks* in the area include the Claypon's Tramroad from Ystradgynlais to Coelbren, and the Penclawdd Canal and Tramroad. (Map 159 Ref. 589967 to 619969).

Cymer, West Glamorgan Welsh Miners' Museum

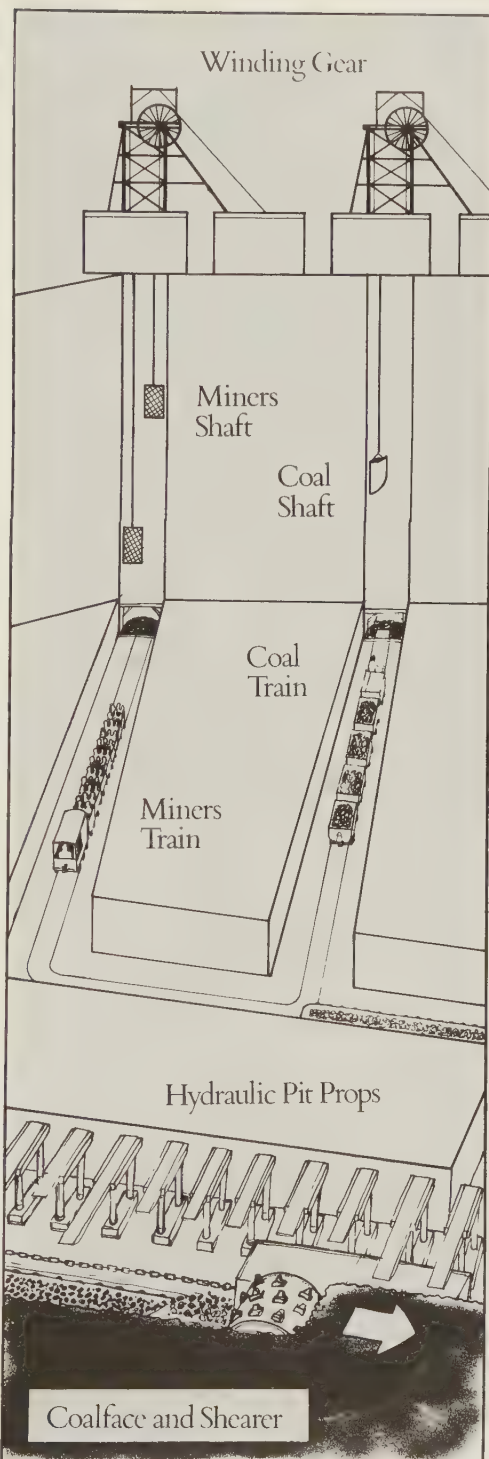
Location: Within the Afan Argoed Country Park, off A4107 near Cynonville, 6 miles north-east of Port Talbot.

Map 170 Ref. 822950

Coal mining dominated the way of life in the Afan Valley until the closure of the last of the major pits, the Glyncorwg, in 1970. To record the story of coal, its miners, their families, struggles and achievements, the Miners Museum was recently established in the Afan Argoed Country Park.

Here, by entering the simulated coal faces, viewing pit gear and examining the miner's equipment, you can experience the harsh realities of 'coal getting' and understand its effect on the communities of the South Wales Valleys. Refreshments and free car park.

Open: Daily, April to end of October 10.30 - 18.00 hrs.
Weekends only in winter, 12.00 - 17.00 hrs.



Gwent

Formerly known as Monmouthshire, industrialisation came to this south-east corner of Wales in the 1780s, when ironworks were set up by ironmasters from the Midlands. They chose the north-eastern edge of the coalfield, where supplies of iron ore, coal for making coke and limestone were plentiful. Ironworks and other industries were established further down the valleys in the 19th century, with improved communications to the ports.

Up until the 1840s coal had been the hand-maiden of iron, but it later became a separate industry in its own right, supplying coal to steam-engines and shipping, being exported overseas, as well as fulfilling the demands of a booming domestic market.

Horse-drawn trams transported raw materials, iron and coal to the Monmouthshire Canal, which opened in 1794, but with the invention of the steam locomotive and the coming of the railways, the importance of the canal network diminished considerably.

Now 100 years on, only a few of Gwent's Collieries are working. Steel is still produced here, but in surroundings far different from those of the old ironworks of the Gwent valleys. Unlike some of the other South Wales valleys, here there is still a wealth of noteworthy industrial sites worth visiting, although space does not allow each one to be included.

Canal toll-house and bridge at Pontymoile, near Pontypool.



A pond-feeder in the former wire producing Angidy Valley.

Tintern, Gwent.

Angidy Valley

Location: North of Tintern, on the A466.

Map 162 Ref. 529002

Tintern Abbey, a majestic Cistercian religious house, set in the peaceful Wye Valley, is only a short distance from the Angidy Valley – an important wire-producing area in the 16th century and for a long period afterwards. So, after your visit to the Abbey, why not explore this valley's fascinating remains of its industrial period which are now surrounded by Forestry Commission woodland. (An informative map of the Angidy Valley is displayed at Tintern Abbey's Exhibition Gallery, which is open to visitors all year.) Approaching Llandogo on the A466, notice the remains of the Coed Ithel Furnace at the side of the road (Ref. 527026). Behind the furnace remains there's a ruined waterwheel pit and traces of a water course. Footpaths have also been cleared to many of the other sites, including tramways, bridges, old mills and river docks, tinplate works and a wire-drawing mill. The Abbey Tintern Blast Furnace in the Angidy Valley has recently been excavated, and the site of the 17th and 18th charcoal blast furnace is to be preserved (Ref. 514003). For a visit to the site, which is open to the public, please telephone Cwmbran 677111 Ext. 657/659.

Tredegar and the Sirhowy Valley

On a little further exploration you will find Tredegar has a number of smaller yet equally significant sites in and around the town, associated with the iron producing days of the 19th century. Compare, for example, the grandeur of living standards of the ironmasters at Bedwellty House with the overcrowded and insanitary conditions of the workers, which caused the town's cholera epidemic in 1832, now symbolised by the Cholera Cemetery at Cefn Golau. (Map 161 Ref. 138081.) In the town centre, there is an impressive clock tower, 68ft. high, appropriately made of iron – yet another reminder of the town's dependence on its two great ironworks in the 19th century.

Tredegar, Gwent.

Tredegar Patch

Location: On hillside $\frac{1}{2}$ mile west of the town centre.

Map 161 Ref. 133095

Patching was the early method of mining for coal and iron ore with pick and shovel. Each miner was allotted a measured patch from which iron ore was dug out, loaded into trams and taken to ironworks. In the town itself, at the local bus station yard, there is an entrance to an early coal level, which supplied Tredegar Ironworks with coal for the blast furnaces. (A level was a tunnel driven into the side of a hill, to work ironstone or coal.) At Bryn Bach Park a once derelict landscape and a legacy of the Industrial Revolution has been reclaimed to create a new landscape accommodating recreational and other needs. (Site between Tredegar and Rhymney, adjacent to Heads of the Valleys road – A465T.)

Tredegar, Gwent

Sirhowy Ironworks

Location: In Sirhowy, $\frac{1}{2}$ mile south from the A465 Heads of the Valleys road. Follow the A4048 from the Tredegar junction, and proceed to the traffic lights. Turn left, crossing the R. Sirhowy into Graham's Yard.

Map 161 Ref. 150102

Here is one of several works established at the heads of the valleys in the late 18th century, utilising local supplies of coal, iron ore and limestone. By 1840, Sirhowy had four furnaces, with a total annual production of 7,000 tons of iron, but late in the 19th century, due to its failure to convert to steel production the works was abandoned.

The site, the first to use coke in Monmouthshire, has recently been excavated and is due to be opened to the public.

Open: Site is open when warden is on duty. Parties by arrangement with Gwent County Planning Dept., County Hall, Cwmbran. Tel. Cwmbran 67711, Ext. 657/659.

Tredegar, Gwent.

Bedwelty House

Location: On A4048, on southern approach to Tredegar.

Map 161 Ref. 144085

Bedwelty House, built in the early 1800s for Samuel Homfray, one of the founder ironmasters of the Tredegar ironworks, is the best surviving example in Gwent of an ironmaster's dwelling. The house, set in beautiful grounds, was used as a private residence for the Tredegar Iron and Coal Company managers until 1901. There is plenty of interest here, including a fine selection of old photographs of the town and a massive block of coal weighing 15 tons, cut for display at the 1851 Exhibition, is now displayed in the formal parkland which surrounds the house.

Open: As Council Offices, during working hours.

Trefil, near Tredegar, Gwent.

Trefil Tramroad

Location: On a minor road, directly north of the A465, and north of Tredegar. (O.S. Map essential).

Map 161 Ref. 122124

From the village of Trefil, above Tredegar and Ebbw Vale, a marvellous walk follows the circuitous route of the Trefil Tramroad around the top of Llangynidr Mountain down to the Brecon and Abergavenny Canal at Cwm Crownon (Ref. 145197). Beyond the Trefil Quarries, on the left hand side there is an unusual site, that of Duke's Stone,



Sirhowy's recently restored ironworks.

where the Duke of Beaufort, a local ironmaster, had his picnic when grouse shooting on the mountain!

Trefil viaduct, with its nine spans and semi-circular arch at Ref. 133109, near Duketown, may also be viewed at the start of the walk.

Nantyglo, near Brynmawr, Gwent.

The Round Houses

Location: 300 yards south of Nantyglo Comprehensive School.

Map 161 Ref. 190102

Another symbol of the ironmasters' power and influence in the early 19th century. Joseph Bailey and his brother Crawshaw, successful owners of the Nantyglo Ironworks, were renowned for their efficiency and sometimes ruthlessness. So unpopular were they with their workers they built round towers in the 1830s to protect them from possible uprisings, which happened fairly frequently at this time due to poor social conditions, abject poverty and lack of representation. Nantyglo was one of the areas where the 'Scotch Cattle' – bands of men dressed in skins and horns of animals – terrorised blacklegs, the name given to traitors to the cause of the workers.

Open: No access to towers, owned by the Round House Farm, but can be viewed from nearby bridleway.

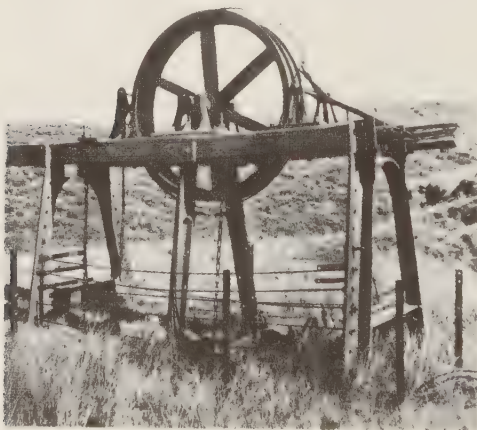
The Torfaen Trail of History

Gwent's Eastern Valley, from Blaenavon in the north, through Pontypool, Abersychan and Cwmbran, to Llantarnam in the south, holds a significant place in the annals of Britain's industrial history. The technological innovations of the Hanbury family of Pontypool in the iron and tinplate industries, and their development of the manufacture of jannped ware, the importance of local coal-mining, and, of course, the experiments at Blaenavon, which led to improvements in steel manufacture, have all contributed to the valley's importance.

Much of this rich heritage survives today in the form of sites of ironworks, canals, coal mines, workers' housing and many more fascinating sites, which can be explored on this Torfaen Trail of History (A number of these sites are being developed as major tourist attractions.)

Start: Blaenavon, 3 miles south of A465 Heads of the Valleys road or at Llantarnam, 2 miles off M4 at Junction 26, on A4042.

Cwmbyrgwn water balance, near Abersychan. Another example of this type of pit headgear can be seen outside the National Museum of Wales, in Cardiff.



Llantarnam

Map 171 Ref. 307933

The Eastern Valley trail starts here at Llantarnam – which is an example of a basically 18th century village in a mainly agrarian locality – in complete contrast to some of the towns and villages, which grew dramatically with the development of the coal and iron industries.

Sites of interest include Llantarnam Abbey and St. Michael's Church. Continue northwards on A4042 to Llanyravon, Pontrhydrun, Panteg, to Pontymoile

Pontymoel (see also CANALS section).

Location: Just south of Pontypool town centre.

Map 171 Ref. 294003

The Brecknock and Abergavenny Canal links with the Monmouthshire Canal at Pontymoel, making it a place of some significance in the early 19th century. Along the towpath, you can see a number of interesting sites, including an impressive aqueduct here, which carries the canal over the Afon Llwyd, as well as a 'gauging stop' where boats were gauged to determine the toll to be paid. The toll cottage, housing a small interpretative exhibition on the local canal system, is open to visitors.

Pontypool.

Glyn Pits

Location: 1½ miles west of Pontypool town centre, off A472 towards Crumlin. Turn left at the sign for East Mon. College of Higher Education.

Map 171 Ref. 265999

Note: This site is only for *real* enthusiasts – not recommended for families. Good, waterproof footwear essential.

Glyn Pits is one of the most important sites in South Wales in the history of coal-mining technology. Two stone-built engine houses survive and are to be restored. One contains a Cornish-type beam pumping engine and the other a flat rope winding engine, both made at the Neath Abbey Ironworks.

Garndiffaith, near Abersychan.

Talywaun Viaduct

Location: Parallel with the A4043, 4½ miles north of Pontypool.

Map 171 Ref. 263042

This viaduct was built in 1876–7, on the Abersychan extension of the London and North-West Railway, linking with the Great Western Railway Talywaun Branch.

Abersychan.

British Iron Works

Location: Off B4246 beneath railway arch, 1 mile west of junction with A4043 in Abersychan.

Map 171 Ref. 258035

Although there are few remains of this once great works, established in 1826, it is worth visiting the site to see the three-storey Cornish-type engine house which survives.

Alternatively, walk to Gwent Panorama No. 45 in the northern corner of Pentwyn rugby football ground (Ref. 262032). For more information obtain a copy of 'Gwent Panorama', published by Hughes & Son Ltd., Griffin Press, Pontypool, and Gwent County Council's new guide to industrial archaeology available from County Hall, Cwmbran, Gwent.

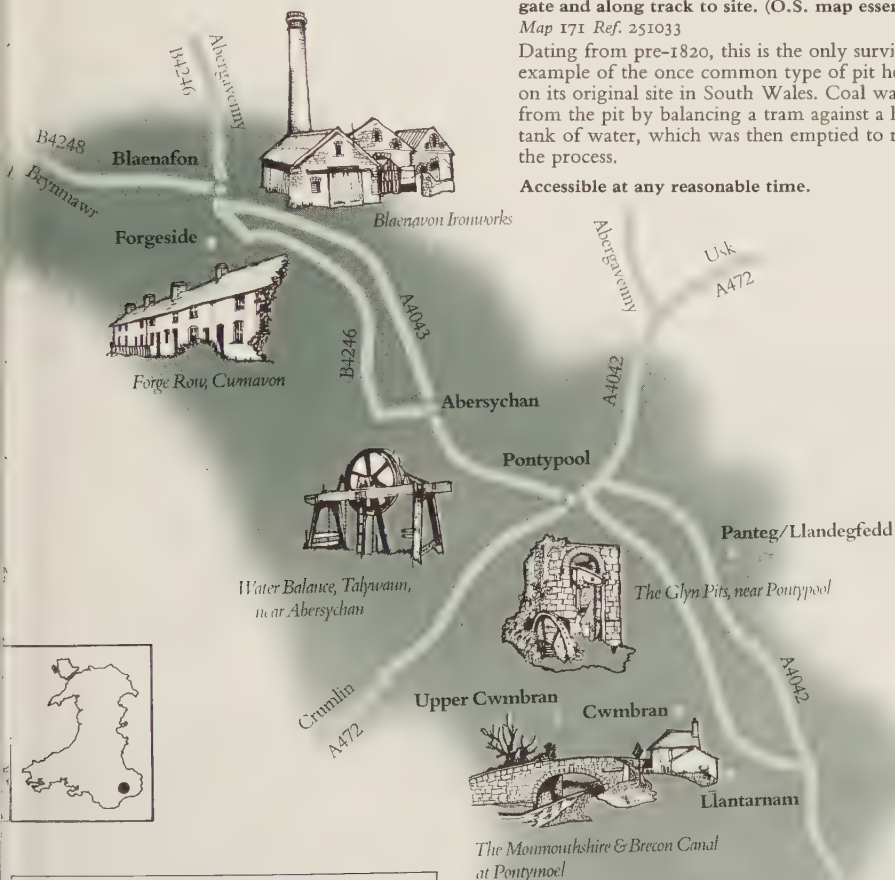
Pontypool The Valley Inheritance Centre

Location: In the former stables of Pontypool Park House.

Map 171 Ref. 285010.

The Stables – a fine example of late Georgian architecture – were built in the 1830s to house the coaches and horses of the Hanbury family, who lived in the adjacent mansion. Today it serves as an interpretative heritage centre for Gwent's Eastern Valley. As well as relating the 'Story of Torfaen', the Valley Inheritance will also give the visitor an insight into the geology, archaeology and geography of the Valley, before he sets out to explore other preserved sites in the area.

Open: All year, daily. Weekdays 10.00 – 17.00 hrs.
Sundays 14.00 – 17.00 hrs.



Heritage Walks

A number of guided walks are organised by Torfaen Museum Trust, aimed at illustrating the area's heritage. They are normally arranged for Sunday afternoons or evenings in the summer months. For further information contact Torfaen Museum Trust, Park Buildings, Pontypool, Gwent. Tel. Pontypool 52036. A series of booklets illustrating heritage attractions and walks in Torfaen is also available.

A Walk in Pontypool Park.

This 2½ mile waymarked walk has been designed around several points of interest within the Park – once the family estate of the Hanburys, owners of the local ironworks. They include Pontypool Park House – of 17th century origin, but improved in the late 18th and early 19th centuries.

A tramroad tunnel and a short length of track can also be seen adjacent to the Town Hall entrance to the park.

The walk not only gives you a glimpse of an ironmaster's lifestyle, but also shows how the estate has evolved to be a public leisure park.

Talywain, near Abersychan.

Cwmbyrgwm Balance Pit Headgear

Location: On mountainside above Abersychan, off B4246, 4 miles north of Pontypool along British road to its end, where there is car parking. Thence through gate and along track to site. (O.S. map essential.)

Map 171 Ref. 251033

Dating from pre-1820, this is the only surviving example of the once common type of pit headgear on its original site in South Wales. Coal was raised from the pit by balancing a tram against a heavier tank of water, which was then emptied to reverse the process.

Accessible at any reasonable time.

Cwmavon, near Pontypool.

Forge Row Ironworkers' Cottages

Location: On A4043, between Pontypool and Blaenavon.

Map 161 Ref. 270064

Forge Row, built in 1804, is a lovely row of 12 well-planned cottages cut into the hillside above the site of the Varteg Forge. It has changed very little from its original design, and the high standard of construction and, for its time, the relatively generous floor areas, make it a prototype of industrial housing.

Open: Only the exteriors can be viewed at present, although a small museum and study centre are planned in the near future.

Big Pit, Blaenavon

Location: On western side of town; approach from B4248 Blaenavon to Brynmawr road.

Map 161 Ref. 239088.

Big Pit is one of the oldest shaft mines in South Wales, sunk in 1860, with earlier workings from the turn of the century. Mining operations have now ceased and the Big Pit is set to become Wales's first major interpretative centre for the South Wales coal industry. Guided tours of the underground workings are planned for the future, but for the 1981-82 season only the mine's surface buildings will be open to the public. They include the lamproom, pithead baths, various workshops, stores and canteen. With the nearby ironworks and other fascinating industrial sites in Torfaen, visitors can witness practically the whole spectrum of the Industrial Revolution in south-east Wales.

Open: Summer only for 1981 season. For details of future opening times, please telephone Pontypool 52036.



Big Pit, Blaenavon, a new interpretative centre for the South Wales coal industry, with exhibition and demonstrations of coal mining in past times.

Blaenavon Ironworks

Location: In North Street, Blaenavon, south-west of the junction of B4046 and B4248; car parking adjacent.

Map 161 Ref. 248093

Blaenavon, standing right on the fringes of the Brecon Beacons National Park, has some impressive and significant remains dating from the Industrial Revolution. It is an important example of a late 18th century ironworks. The blast furnaces, now being restored, were originally built in 1789, and reached their peak of production in the 1820s, after which they entered a period of decline, though some remained in use until the 1890s. The remains of a bank of blast furnaces, as well as a water balance lift and two typical cast houses of the early 19th century are to be seen on this site. There are also the ruins of ironworkers' cottages, known as Stack Square.

A viewing platform, with interpretative facilities, has been erected here for tourists, until the work is completed. A fact sheet is also available.

Open: Viewing platform is open to visitors during normal working hours only.

Garnddyrys Forge, near Blaenavon

Location: On B4246, 2½ miles north of Blaenavon towards Govilon. Car parking in lay-bys off road.

Map 161 Ref. 258118

A forge was established at this site in 1817 to manufacture wrought iron from the 'pigs' of cast iron produced by the blast furnaces at Blaenavon. The bars of iron were then taken downhill on Hill's Tramroad to the canal at Llanfoist. (Ref. 285130).

The tramroad, which emerges from a tunnel above Pwll Du Quarry, now makes a marvellous footpath over the Bloreng Mountain. Many interesting features can be seen en route, as well as outstanding views of the Black Mountain. (Ref. 248097 to 245116). Alexander Cordell's 'Rape of the Fair Country' – good holiday reading – was set in this area.



Blaenavon Ironworks in 1800.



St. Peter's Church, Blaenavon

Location: In Blaenavon town centre.

As this church – the only example of an 18th century type in Gwent – was built by Hopkins and Hill, the local ironmasters, it is not unusual to find that there are so many links with the iron industry within the church. There are an iron font, memorials to the pioneers of Blaenavon iron-making – even iron tomb covers in the churchyard.

Open: At any reasonable time.

Forgeside Works

Location: In Forgeside Village, 1 mile south west of Blaenavon, off B4246 on left hand side. Village signposted. Street parking near works.

Map 161 Ref. 245085

It was at Blaenavon that Percy Carlyle Gilchrist, a cousin of Sidney Gilchrist Thomas, assisted Thomas in his experiments on the Bessemer Steel Converter lining. Forgeside was added to the main Blaenavon works after the 1860s.

A memorial to Gilchrist Thomas can be seen in the grounds of the works. Close by there is a good example of planned workers' accommodation.

Open: The works are now owned by a company of foremasters who will accept interested visitors, at any reasonable time. Just enquire at the office.

The Clydach Gorge

On the southern edge of the Brecon Beacons National Park, between Brynmawr and Abergavenny, is the magnificent Clydach Gorge, the setting for a great deal of industrial activity during the 18th and 19th centuries.

Although the A465 Heads of the Valleys road now cuts through the gorge, there is still much to be seen, including the remains of early ironworks, industrial housing, a network of tramways, bridges, quarries and limekilns.

The Brecon Beacons National Park Committee, in co-operation with Gwent County Council, have produced a fascinating booklet on the Clydach Gorge. As well as providing an introduction to the ironmaking process, transport in the valley and social conditions there in the 19th century, the booklet also features three trails which all start from just below Clydach South (Ref. 231135). Available, price 60p, from National Park Information Centres, local booksellers in the Abergavenny area or by post, price 75p from Brecon Beacons National Park, 7 Glamorgan Street, Brecon, Powys.

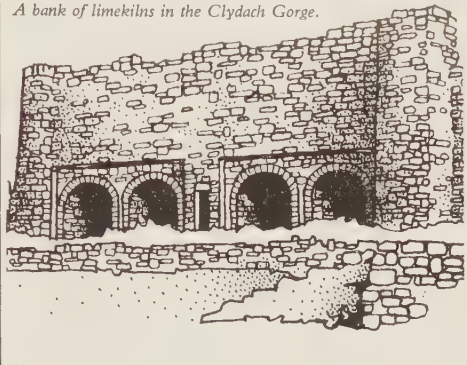
Clydach, near Brynmawr, Gwent. Clydach Ironworks

Location: Off minor road west from Gilwern to Brynmawr, which runs parallel with A465.

Map 161 Ref. 229132

A lovely cast-iron bridge, dated 1824, spanning the River Clydach, leads to the Clydach Ironworks site. They were established before 1795 and by 1833 had three blast furnaces operating. The ruins of two and of the charging house can be seen here. The blast was initially provided by water power from the river, but later by steam power.

A bank of limekilns in the Clydach Gorge.



Iron ore was transported to the works by a number of tramroads, the route of one of which may be followed from 235140 to 243145. The ironworks was also linked by tramroad to the Brecon and Abergavenny Canal.

Ynys-y-Garth Cottages – a row of three-storey workers' cottages associated with the Brynmawr Coal and Iron Co. Ltd. – may be seen on the other side of the river, at Clydach. These have been in ruins for a long time. (Ref. 225127).

Panorama – Clydach Gorge

Map 161 Ref. 215126

If time is limited and you cannot visit all the individual sites in and around the Clydach Gorge there is a good viewpoint, 40 yards along a footpath below the minor road, which is 1 mile east of Brynmawr Comprehensive School.

Features to be seen in the panorama include the Clydach Ironworks, the track of the former Abergavenny to Brynmawr railway, and routes of former tramways. See 'Gwent Panorama', featured on page 43, for further details.

Access: Leave Brynmawr along intermediate road to the bridge over the Heads of the Valleys road (A465). Then follow minor road which passes the Comprehensive School.

Gilwern, near Abergavenny, Gwent.

Llanelly Furnace and Forge

Location: Off minor road, 1 mile west of Gilwern. (Runs parallel with A465, on northern side.)

Map 161 Ref. 232138

Before Abraham Darby's experiments with the use of coke, which were to revolutionise the whole ironmaking process in the early 18th century, charcoal was used to smelt iron. Large supplies of wood were, therefore, required to fire the early furnaces and they were invariably located near thickly wooded areas. Llanelly's was a charcoal-fired furnace of the late 17th century, although it later adopted the coke-firing method of ironmaking. Near the old works is the house of the 'Clerk to the Foundry', dated 1693.

The site of the Llanelly Forge is only a short walk from the furnace (Ref. 235140), by the Clydach River.

Roads and Bridges

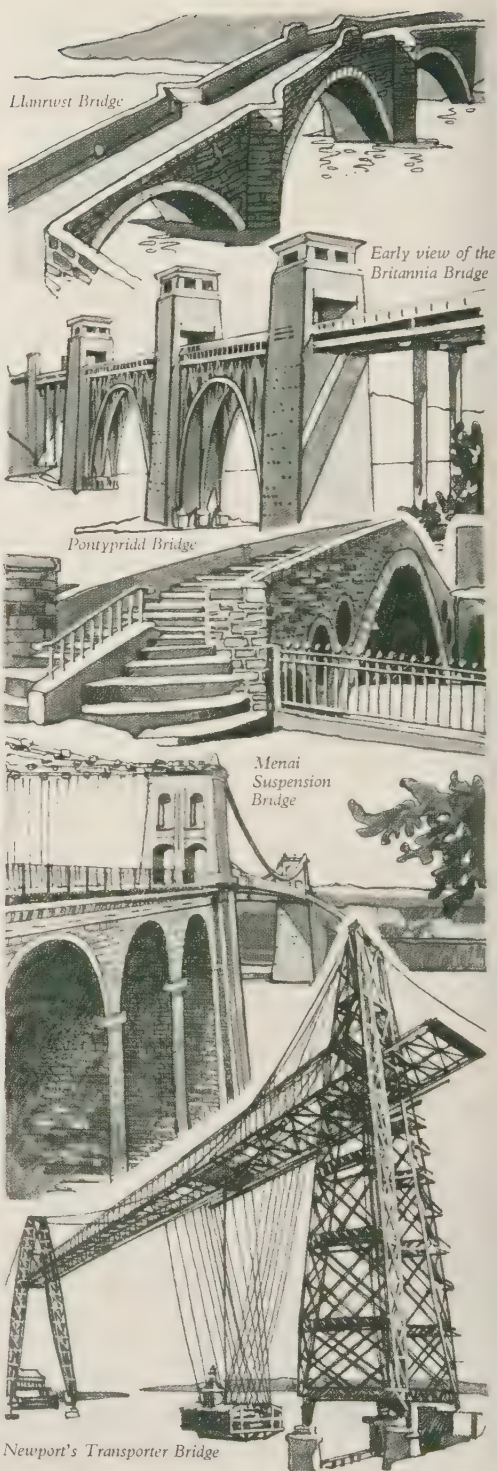
When the Romans established their network of forts in Wales, they linked them through a road system, parts of which can still be found. Some are only overgrown tracks, others are partially in use or have been used in the construction of major roads. Ordnance Survey Maps in the 1:50,000 series will help you locate many of them.

Roads which were generally poor through the Middle Ages, improved after the setting up of the Turnpike Trusts in the 17th and 18th centuries, when tolls were levied on all the well-frequented routes. Toll houses, reminders of the turnpike period, may be seen in various parts of Wales, e.g. on the A5 at Llanfairpwll, Isle of Anglesey.

This was one of many toll houses on Thomas Telford's London to Holyhead road - a remarkable feat by a great road builder. Another of his major achievements, the Menai Suspension Bridge, followed the road. Two other great engineers, Robert Stephenson and Isambard Kingdom Brunel, were also involved in the building of bridges in Wales.



Thomas Telford played an important part in the development of transportation in Wales. Among his great feats of engineering in Wales are the Menai Suspension Bridge (1820), linking the Isle of Anglesey with the mainland, and the spectacular Pontcysyllte Aqueduct, which takes the Llangollen Canal 120 ft over the River Dee.



Betws-y-Coed, Gwynedd.

Waterloo Bridge

Location: On the A5 at Betws-y-Coed.

Map 115 Ref. 799558

Designed by Thomas Telford and built by the engineer William Hazeldene, it was opened in the year 1815, which gave it the name of the Waterloo Bridge. The graceful arch, which was cast at Plas Kynaston foundry, Ruabon, is decorated with roses, thistles, leeks and shamrocks, a type of decoration rarely seen in Telford's work.

The arch carries this inscription:

**THIS ARCH WAS CONSTRUCTED IN THE
SAME YEAR THE BATTLE OF WATERLOO
WAS FOUGHT.**

Chepstow, Gwent.

Brunel's Tubular Suspension Bridge (site)

Map 162 Ref. 539941

Soon after Brunel's brainchild, the Great Western Railway from London to Gloucester, was completed in 1845, the South Wales Railway Company was formed to finish the route via Newport and Cardiff to Milford Haven. In order to complete the line Brunel had to cross the River Wye, a distance of some 600ft. This problem was complicated by Admiralty constraints requesting a navigable opening of 300ft. wide with headroom of over 50ft. at high tide. Because of the poor ground on the Chepstow side Brunel was forced to provide firm foundations by sinking a series of cast iron cylinders using compressed air working and then spanning the navigable opening by two trussed girders of wrought iron formed into tubes which supported the rail platform by suspended links.

Further upstream from the Wye Railway Bridge is an impressive cast iron bridge, designed by engineer J. U. Rastrick and built in 1813. (Ref. 536944.) Due north, at Bigsweir on A496 (539051), another impressive cast iron bridge spans the Wye.

Conwy, Gwynedd.

Telford's Suspension Bridge

Map 115 Ref. 787777

In 1826 work was completed on Telford's graceful suspension bridge over the Conwy Estuary. It was built in the same style as the Menai Bridge, except that its towers were built to match those of Conwy Castle. A new road bridge, opened in 1959, has replaced Telford's masterpiece, which has been preserved by the National Trust. Visitors can walk over the bridge alongside which the railway is carried by a tubular bridge 410ft. long, built by Robert Stephenson in 1846-8.

Interpretative Centre: A National Trust Heritage Centre is being established at Aberconwy House, in the town.

Llanrwst, Gwynedd.

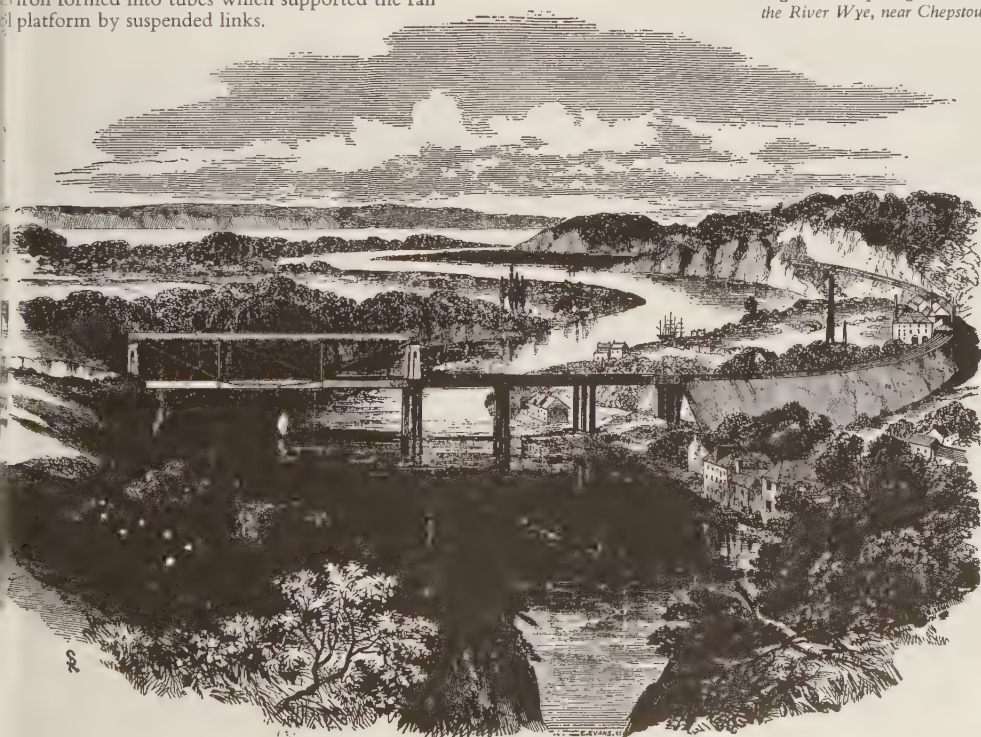
Pont Fawr - Stone Bridge

Location: Just off A470 at Llanrwst.

Map 116 Ref. 799614

Frequent visitors to North Wales have been fascinated by this old bridge over the Conwy at Llanrwst. It was reputedly built in 1636 by Inigo Jones at a cost of £1,000. It is 169ft. long, with a

*An engraving of Brunel's
original railway bridge over
the River Wye, near Chepstow.*



centre arch of 60ft., the two side arches being 45ft. long. The supporting piers are only 10ft. wide.

On one of the centre stones of the bridge there is an interesting feature worth noting, the carved coat of arms of the Prince of Wales.

Menai Bridge, Isle of Anglesey, Gwynedd.

Menai Suspension Bridge

Location: Follow A5 from Bangor to Isle of Anglesey, stopping at approaching lay-bys for better views.

Map 114 Ref. 556714

This bridge over the Menai Strait was the last link of Telford's road – now the A5 – from London to Holyhead. An Act of Parliament, passed in 1819, permitted the building of the bridge and work commenced in the same year.

Telford adopted the suspension principle, making this the world's first big iron suspension bridge, the main span of which is 579ft. To meet Admiralty navigation requirements it has a headroom of 100ft. Sixteen suspension chains, all meticulously tested for tension, run back 60ft. into tunnels blasted into the rocks. Each of the links are over 9ft. long, but no longer the originals.

Museum: Bangor's Museum of Welsh Antiquities has a display relating to the construction of the Bridge, including drawings, prints, Telford's chair from the Castle Hotel, Bangor, a part of one of the original links and models.

Menai Bridge, Isle of Anglesey, Gwynedd. Britannia Railway Bridge

Map 114 Ref. 541712

Robert Stephenson, the son of the railway pioneer, George Stephenson, and Sir William Fairbairn built this former tubular bridge to the west of Telford's masterpiece over the Menai Strait. Work started in 1846, but it was not until 1850 that the first London – Holyhead express train ran across the Straits, at a

height of 200ft. The bridge consisted of two huge tubes, supported on three massive stone towers 100ft. above the water and at each end there are two giant lions, 13ft. high and 25ft. wide, which are unique.

Following a major fire in 1970, the wooden lining of the original bridge was replaced by steel, with open track instead of the dual tubes. A new road has been built across this famous Britannia Bridge.

Newport, Gwent.

Newport Transporter Bridge

Location: From Cardiff Road follow Commercial Road into Alexandra Road, turning left in Brunel Street. From M4, leave at Junction 24, following Spytty Road to traffic lights at Orb Works, then first left and first right.

Map 171 Ref. 318863

This splendid piece of engineering was designed by F. Arnedin (builder of the famous Marseilles Transporter Bridge) and R. H. Haynes. Opened in 1906, it is now one of only three such bridges in the U.K.; the others being at Crossfields, Warrington, and Middlesbrough. Two towers of lattice steelwork, each 242ft. high, support a platform spanning the River Usk. Along this platform runs a travelling frame from which is suspended the transporter car. This is supported by 30 heavy duty cables about 645ft. long and powered by an electric motor and drum mechanism, located in the engine house on the car. The tower can be climbed for a small charge.

Open: Free of charge to cars (6 at a time) and people from 0530 – 23.00 hrs. Monday to Saturday. Sunday 13.00 – 23.00 hrs.

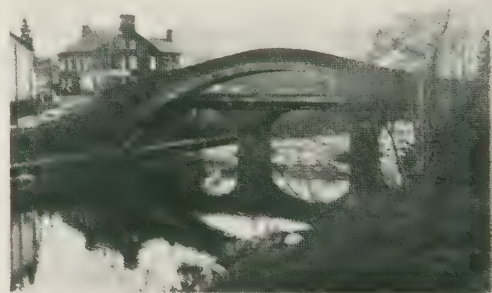
Some of Brunel's works in South Wales



Amongst Isambard Kingdom Brunel's engineering works in South Wales were the Taff Vale, Vale of Neath and Llynfi Valley Railways and the South Wales Mineral Railway. Along the Taff Railway, opened in 1841 and still in use, are a number of sites worth noting, including the Quaker's Yard Viaduct (Ref. 089965) and Tunnel

(Ref. 090963). The old Main Incline (Ref. 088955) which required rope haulage, and the Pontypridd viaduct spanning the Rhondda River (Ref. 071988). On the original South Wales Railway line, Brunel's principal works include the Portskewett Pier (Ref. 512882), Lougher Bridge (Ref. 561986) and Llansamlet Flying Arches (Ref. 701975).

For further information about Brunel's works in Wales, please write to S. K. Jones, Wales Representative of the Brunel Society, 499 Cowbridge Road West, Cardiff CF5 5TF.



Pontypridd's single-arched pack-horse bridge.

Pontypridd, Mid Glamorgan.

Pontypridd Bridge (1755)

Location: Follow the one-way system northwards and it can be seen, parallel with the newer bridge of 1857. Just off A470 at Pontypridd turn-off.

Map 170 Ref. 074904

William Edwards, a practising minister and architect, succeeded at the third attempt to build this single arched stone bridge, which spans 140ft. over the River Taf. He started in 1746, but did not complete the bridge until 1755, succeeding in doing so by piercing the abutments with a series of three cylindrical holes diminishing in size to relieve the pressure on the centre of the arch.

He also built the single arched Dolauhiron Bridge, over the Tywi, $\frac{1}{2}$ mile north of Llandovery.

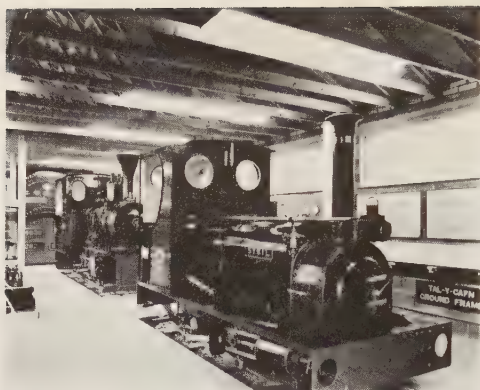
Great Little Historic Trains

The building of narrow-gauge railways in the mid-19th century and afterwards was very much a part of industrial development in many parts of Wales.

Some started as mineral lines, using horse-power helped by gravity; they were also used to carry workmen and local folk, becoming in one sense passenger carrying railways. The earliest passenger line was the Mumbles Railway at Swansea; alas! it is no more. Coffin's old tramroad at Hopkinstown, Rhondda, which can still be traced (see Rhondda Section) carried shoppers from Pontypridd market to Cymmer in trains which were returning empty after carrying coal to the canal. There are many old bridges and early stations on the narrow-gauge lines and on the main and branch lines of British Rail.

The Great Little Trains of Wales also have a 'big sister' - The Gwili Valley Railway. This is Wales's first standard gauge steam railway, operating over a mile of the old Carmarthen to Aberystwyth line northwards from Bronwydd Arms Station, which is 3 miles north of Carmarthen, off A484 Newcastle Emlyn road. Services run on weekends during summer months and also mid week late July - early August.





Two steam engines at the Betws-y-Coed Railway Museum. Other fascinating railway museums can be visited at Penrhyn Castle, near Bangor, Corris, Porthmadog and Tywyn.

Bala, Gwynedd.

Bala Lake Railway

Location: Starts from Llanuwchllyn and runs via Llangower to Bala.

Map 125 Ref. 881301

Many people still remember using this line as part of British Rail's route from Ruabon through to the Cambrian Coast line at Morfa Mawddach, just south of the Barmouth bridge. Abandoned under the policy of line closures, the section between Bala and Llanuwchllyn re-opened in 1972 as the 3¼ miles long Bala Lake Railway, operated by steam and diesel locomotives on a gauge of 1ft. 11½in. The line's workshops are in the old goods' buildings at Llanuwchllyn together with new workshops and carriage sheds which passengers may visit. Of particular interest is Llanuwchllyn passenger station, the only existing original Bala and Dolgellau Railway structure, of 1867, which has been extended to provide a cafe and other facilities for passengers. At Llanuwchllyn there is also a G.W.R. double twist locking original frame, one of the only two now in use in Britain, as well as historical slate wagons and signals.

Period of operation: Easter week, then mid April to October. For more details ring Llanuwchllyn 666 or Bala 226.

Merthyr Tydfil, Mid Glamorgan.

Brecon Mountain Railway

Location: Starts from Pant Station, ¼ mile north of A465 Heads of the Valleys trunk road at Merthyr Tydfil.

Map 160 Ref. 060097

The first narrow gauge 'Great Little Train' to open in South Wales. Starting at Pant Station near Merthyr Tydfil, it runs for two miles through the magnificent Brecon Beacons National Park. The present terminus is at Pontsticill on the shore of the Taf Fechan Reservoir, where passengers can enjoy the mountain scenery, and a lakeside or forest walk. Later construction will take the railway a further 3½ miles into the Park, passing through the highest railway tunnel in Britain. This Mountain Railway is constructed almost entirely on the trackbed of the Brecon & Merthyr Railway which opened in 1859

and originally ran from Newport to Brecon. Becoming part of the Great Western Railway under the Railways Act of 1921, the line continued to serve the area until it closed for traffic in 1962. Locomotives on the railway have been collected from three continents and some are still in the process of restoration. The main locomotive in service at present is an Arn Jung tender locomotive, built in Germany in 1908. Another fully restored locomotive which will also be used is an O-4-O saddle-tank built in 1903 in Leeds.

Period of operation: Easter to end of October, daily. Trains run from 11.00 hrs. to dusk. For timetable telephone Merthyr Tydfil (0685) 4854.

Fairbourne, near Barmouth, Gwynedd.

Fairbourne Railway

Location: Just south of Barmouth and Mawddach estuary.

Map 124 Ref. 615148

Like others of its kind, the Fairbourne Railway started life in the 19th century as a tramway at the unexpectedly wide gauge of 2 feet when one considers its present tiny 15 inch gauge. Worked by horses it was used in the construction of the village until the gauge was changed to 15ins. in 1916. Though disused from 1940 to 1946 it was saved by an enthusiast and its present locomotives are eye-catching replicas of bigger ones.

Period of operation: Easter Week. Sundays only April to mid May, then daily to mid October. Full details of times are available from the Railway Company. Telephone Fairbourne 250362.

The Bala Lake Railway.



Porthmadog, Gwynedd.

Ffestiniog Railway

Location: Main station at Porthmadog, with present top terminus at Tanygrisiau. Serves Blaenau Ffestiniog.

Map 124 Ref. 572384

The early transport of slate was by horse, cart and river transport down the Afon Dwyryd on lighters to the ocean-going craft waiting in the bay. The tramroad built by William Madocks during the



The Ffestiniog Railway runs through beautifully unspoilt woodlands.

construction of the Cob embankment was to be the forerunner of the now famous Ffestiniog Railway which was opened on 23rd April, 1836. The narrow gauge railway was horse drawn until the application of steam power in 1863. Because of the ruling gradient from Blaenau Ffestiniog to Porthmadog horses were used only for the uphill journey with a special horse carrying truck being provided for the downhill run. Locomotive engines came in 1863 and from 6th January 1865, passengers were carried. Fairlies were introduced in 1869, and subsequent examples have been built and still operate, which proved the success of both the principle and the narrow gauge. Passenger services ceased with the outbreak of war in 1939, but freight services continued until 1946, after which only a short length in Blaenau Ffestiniog was in use. The Railway has re-opened by stages since 1955, after intensive work by volunteers, which continues today to complete the restoration into Blaenau Ffestiniog itself. The line follows its original route and the achievement of Boston Lodge Foundry, the line's engineering sheds at the end of the Cob, are seen in almost every piece of ironwork, particularly bridges. There is an interesting small railway museum at the Porthmadog terminus of the line.

Period of operation: All year – daily March to early November, then restricted weekend service from November to February. For timetable telephone Porthmadog (0766) 2384.

Llandudno, Gwynedd

Great Orme Tramway

Opened on 31st July 1902 over its lower section of 828 yards, the funicular, cable operated, Great Orme Tramway, was a local business venture to add lustre to Llandudno's thriving tourist trade. The upper section of 850 yards was opened a year later, on 8th July 1903, and two cars were operated on each section from a central power source at halfway. The present cars are the original vehicles, operating on a gauge of 3ft. 6in.

Carmarthen, Dyfed

The Gwili Railway

Location: Starts from Bronwydd Arms, on A484, approximately 3 miles north of Carmarthen, on A484 Newcastle Emlyn road.

Map 159 Ref. 418237

Based on a 1½ mile section of the former Carmarthen to Aberystwyth Great Western branch line, the Gwili is the first standard gauge steam operated tourist railway in Wales. An active Preservation Society has re-laid the track from Bronwydd Arms, just a few miles from Carmarthen to Cwmdwyfran, but plans are in hand to extend the line to Llanpumpaint. Locomotives owned by the Railway Company include an 0-4-0 Peckett, named Merlin, and Dinmore Manor, their latest acquisition. Ample free car parking, refreshments and souvenir shop at Bronwydd Arms Station.

Period of operation: At regular intervals during summer, including most weekends and Bank Holidays. For further information, including free timetable telephone Neath 2191

Llanberis, Gwynedd.

Llanberis Lake Railway

Location: Starts on the shore of Llyn Padarn, in the Padarn Country Park.

Map 115 Ref. 584614

The growth of output at the Dinorwic Slate Quarry, Llanberis and the potential of Y Felinheli on Menai Straits as a slate export port, led to the building of The Padarn Railway in 1840. A small animal and gravity-worked line had operated in 1824 from Allt Ddu at nearby Deinoli to Y Felinheli, also known as Port Dinorwic, but this line was replaced by a lower route which became a 4ft. 0in. gauge steam operated line with primitive passenger facilities and slate wagons. 'Fire Queen', a locomotive built at Northfleet, Kent in 1848, is now at Penrhyn Castle in the care of the National Trust. The present Lake Railway operates from Gilfach Ddu, Llanberis from the former yard of the Dinorwic Quarries on a track of 1ft. 11½in. gauge, 'Dolbadarn', an 0-4-0 saddle tank locomotive, built by Hunslet in 1922, being one of its attractions.

Period of operation: Easter to early October. Telephone Llanberis (0286 82) 549 for further details.

Llangollen, Clwyd.

Llangollen Station

Location: Alongside the River Dee in the centre of the town.

Map 117. Ref. 21242.

Through the efforts of railway enthusiasts Llangollen's Railway Station has been recently restored. The station buildings contain items of transport interest, including steam locomotives and rolling stock. Special 'Steam Days' and exhibitions are also held during the year.

Open: All year. Saturdays and Sundays 10.00 – dusk. Also weekdays in summer season. Admission free. (Tel. Pantymwyn 500).

Tourist Ticket

The Narrow Gauge Tourist Ticket entitles you to 7 days' unlimited travel on all the 'Great Little Trains', excluding the Snowdon Mountain Railway. Details are available at all booking offices or direct from the Narrow Gauge Railways of Wales, Joint Marketing Panel, c/o Wharf Station, Tywyn, Gwynedd. Tel. Tywyn (0654) 710472.

They will also supply you with a timetable for all the 'Great Little Trains'.

Llanberis, Gwynedd.

Snowdon Mountain Railway

Location: Starts in the village of Llanberis.

Map 115 Ref. 583598

The line runs from Llanberis to within a few yards of the top of Snowdon mountain, $4\frac{1}{2}$ miles, reaching 3,500 feet. Pressure for a line started as early as 1869 but it was 1894 when the Snowdon Mountain Tramroad and Hotels Co. was formed and another three years before the 2ft. 7 $\frac{1}{2}$ in. gauge track was laid.

At its steepest it is 1:5 and the locomotives, made by the Swiss Locomotive & Machine Co. (SLM) of Winterthur, gain adhesion by a rack and pinion system. Two viaducts are of particular interest: the 166 yards 14-arch Lower Viaduct on a gradient of 1:8 $\frac{3}{4}$ – each arch is 4 feet higher than the one below it – and the Upper Viaduct of 63 $\frac{1}{2}$ yards and four arches, the last of which bridges the Ceunant Mawr waterfall.

Period of operation: Week before Easter to early October. Check times by telephoning Llanberis (0286 82) 223.



'Talyllyn' in full steam at the Wharf Station, Tywyn.

Tywyn, Gwynedd.

Talyllyn Railway

Location: Starts from Tywyn Wharf. Runs via Abergynolwyn to Nant Gwernol.

Map 135 Ref. 585005

This was conceived by Lancashire cotton barons about 1860 to link Bryn Eglwys quarry, which they had recently bought, with Aberdovey. The line opened in 1866, but to Tywyn only, with two engines, passenger coaches and over a hundred slate wagons. In 1877, 23,269 passengers were carried. A fine little museum at Wharf Station, Tywyn, has exhibits of old narrow-gauge engines from England, Scotland, Ireland and Wales, as well as a great deal of railway miscellanies. Engine No. 1, 'Talyllyn', was built by Fletcher Jennings, Whitehaven, in 1864 and was delivered new to the little line, where she continues to work.

Period of operation: Easter to end of September daily. Daily excluding Mondays and Fridays during October. For timetable telephone Tywyn (0654) 710472.

Aberystwyth, Dyfed.

Vale of Rheidol Railway

Location: Starts from the B.R. station in the town centre.

Map 135 Ref. 585816

Built by Pethick Bros., of Plymouth, the line was first used in 1902 to carry ore from the Rheidol Valley's mines for shipment from the quayside at Aberystwyth, and to carry passengers. Vested in the Cambrian Railways on 1st January 1913, then in the Great Western Railway and finally, on 1st January 1948, in British Rail, the line has always been able to interest the industrial historian on its 12 miles' line rising from near sea level to 680 feet. 'Prince of Wales', constructed by Davies and Metcalfe of Manchester – rebuilt by the Great Western – is the only original engine of the four now working.

Period of operation: Easter to early October.

Porthmadog, Gwynedd

Welsh Highland Railway

Location: Start of line directly opposite the main B.R. Station at Porthmadog.

Map 124 Ref. 572392

The latest addition to the 'Great Little Trains' network of narrow gauge railways, the Welsh Highland Railway has now re-opened for a $\frac{3}{4}$ mile section between Porthmadog and Pen-y-Mount. Through the efforts of a group of very active volunteers, plans are in hand to extend the line on the track of the original line which ran through the spectacular Aberglaslyn Pass, to Beddgelert and Rhyd-ddu. The Welsh Highland Railway, originally the longest narrow gauge railway in Britain, succeeded the North Wales Narrow Gauge Railway which was first opened to passengers between 1877 and 1881. Slate was the main freight carried on the line, but with the closure of the quarries serving the railway, the line eventually ceased running in 1936.

Period of operation: Easter to October. Telephone Porthmadog 3402 for timetable details.

Llanfair Caereinion, near Welshpool, Powys.

Welshpool and Llanfair Railway

Location: Starts at Llanfair Caereinion station and runs to Sylfaen Halt.

Map 125 Ref. 106068

The Montgomeryshire Canal Act, 1794, authorised a canal from Llanymynech to Newtown and at the same time granted mineral railway rights for a line up to a distance of three miles away from it. In 1818 a horse-worked railway, using 3 feet long cast-iron rails on stone sleepers from a quarry near the canal, was opened. The present line was completed in 1903 and worked between Llanfair Caereinion and Welshpool until 3rd November 1956, but a part was re-opened in 1963. Engineering features of note are the three-span underslung plate girder viaduct over the Banwy river and the stone six-arch Brynelyn viaduct over a tributary at Cyfronnydd. No. 1 'The Earl' and No. 2 'The Countess' engines were built in 1902 by Beyer Peacock & Co. Ltd. of Gorton Foundry, Manchester.

Period of operation: Easter and Spring Bank Holiday. Then daily early June to September. Weekends only from September to early October. Telephone Llanfair Caereinion 441 for further details.

Canals

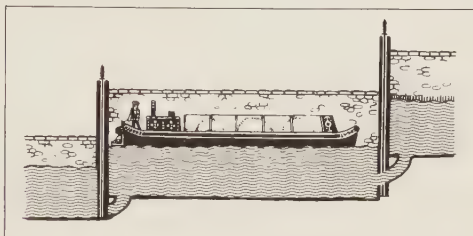
The transport needs of industrial expansion were met by canals which led to further industrial expansion in many parts of Wales. Tramroads were built to link them with ironworks, quarries and coal mines, often situated in remote areas. The export trade was greatly assisted by the links provided by the canals between the works and major ports of Newport, Cardiff and Swansea.

The importance of the canals declined with the coming of the steam railways and many of them fell into disuse. In North Wales, the Llangollen Canal, considered to be one of the most attractive in Britain, was used by passenger-carrying boats as early as 1884. The Brecknock and Abergavenny Canal, which flows through a part of the scenic Brecon Beacons National Park is also used extensively by passenger boats and holiday craft. Other canals in Wales have been partially restored in recent years, including a section of the Montgomery Canal, near Welshpool, which is now navigable.

Locks – how they work

The valley canals of South Wales to reach the heads of the valleys had to 'climb' their way through many locks which carried them upwards to their final heights above sea level. The locks were ingeniously designed to take the narrow boats and raise them to the higher levels.

Illustrated here is a typical lock. To reach a higher level on the canal, a boat enters the lock by the first set of gates, which are then closed. Sluices in the opposite gates are opened, allowing water from the higher level to run into the lock and only when the water in the lock is level with that in the higher section of the canal, can the boat pass through to that higher section.



Brecknock and Abergavenny Canal

The course of the B & A Canal, completed in 1812, is almost entirely within the Brecon Beacons National Park, and follows the lovely Usk Valley through the surrounding unspoilt countryside. Cruising peacefully along the canal in a holiday narrow-boat or walking along the towpath you will discover many reminders of the canal's earlier history – limekilns, boundary marker posts, aqueducts, bridges, locks and warehouses, wharves, attractive little cottages and tramroad remains. Llanfoist Wharf, the terminus of Hill's tramroad, is probably one of the most impressive wharfs.

Only a small selection of sites are mentioned here. If you wish to follow the whole length of the canal or only explore a certain section in greater detail, why not obtain a copy of R. Alan Stevens' *Towpath Guide No. 2*. This is an extremely helpful tourist guide, which tells you much of what you need to know about the Brecknock and Abergavenny and Monmouthshire Canals.

As well as detailing the architecture of the canal, its bridges, aqueducts, wharves and limekilns and locks the author also suggests some useful stopping places for a pub lunch or a thirst quenching drink along the canal's route.

Other places of tourist interest, such as information centres, a museum or craft shop are also mentioned.

Milepost at the Pontymoile junction of the Monmouthshire Canal.



Main points of interest

Brynich Lock	Map 160	Ref. 076273
Brynich Aqueduct	Map 160	Ref. 079273
Talybont Wharf and Bryn Oer Tramroad Terminus	Map 161	Ref. 117224
Brecon Wharf	Map 160	Ref. 055279
Goytre Wharf and Limekilns	Map 161	Ref. 313064
Govilon Limekilns	Map 161	Ref. 275138
Llanfoist Wharf and Canal Warehouse	Map 161	Ref. 284131
Gilwern Aqueduct	Map 161	Ref. 243145
Gilwern Limekilns	Map 161	Ref. 242147
Locks at Cwm Crawnnon	Map 161	Ref. 146199 and 139198
Warehouse at Terminus of Bailey's Tramroad	Map 161	Ref. 271137

Llangollen Canal

On entering Wales at Chirk, the Llangollen Canal crosses the famous Chirk and Pontcysyllte Aqueducts and runs through the lovely wooded Vale of Llangollen. This section of the Shropshire Union Canal, engineered by Jessop and Telford, was originally intended to link the border towns of Shrewsbury and Chester via the ironworks of Wrexham and Ruabon, which was also an important brick manufacturing town. But today, as one of the most spectacular stretches of canal in Britain, it is used quite extensively by holiday cruisers which can be hired on a weekly basis.

Chirk, near Llangollen, Clwyd. Aqueduct (1801) and Viaduct (1848)

Location: Off the Glyn Ceiriog road (B4500) west from Chirk. After 500 yds., follow the short path to the left.

Map 126 Ref. 287372

These two feats of engineering construction are only feet apart and are near neighbours to the Pontcysyllte Aqueduct. The aqueduct at Chirk is a superb example of engineering carrying the canal over the River Ceiriog at a height of 70ft. The original structure was built with cast iron bed plates in the trough, these being replaced by a cast iron trough in the 1870s.

Northwards from here, the canal runs through the 459ft. Chirk Tunnel, to the Dee Valley. The railway viaduct was built to carry the Shrewsbury and Chester Railway across the valley on sixteen masonry arches (Ref. 285376).

Llangollen, Clwyd. Canal Exhibition Centre

Location: At the canal wharf on the edge of the town.

Map 117 Ref. 209428

All the important aspects of the canal era are featured at this fascinating exhibition centre, housed in an early 19th century warehouse at the canal wharf. The story unfolds in a most entertaining way with the use of film, slides, working and static models, pictures and original canal exhibits. There is a lifelike reproduction of a 19th century coal mine, displays showing how the canals were constructed and how they contributed to the development of our industries. Also illustrated is the way of life of the people who built and worked on Britain's first major transport system.

Open: Easter to end of September. Daily, including Bank Holidays, 11.00 – 17.00 hrs. Winter by arrangement.

Llangollen, Clwyd. Pontcysyllte Aqueduct (1794–1805)

Location: Off A5 near Trefor, 4½ miles east of Llangollen, or follow A539 from town centre.

Map 117 Ref. 271420

Thomas Telford built this masterpiece of engineering to carry the Shropshire Union Canal at a height of 121ft. above the River Dee. Nineteen sets of arches, each with a span of 53ft., making a total width of 1,007ft., carry the cast iron trough of the canal and the towpath. The aqueduct, still used by canal holiday craft, and the towpath are easily accessible to walkers from Trefor, on the northern end.



Examples of traditional canal art at Llangollen's Exhibition Centre.

Industry was introduced to this area during the construction of the aqueduct, and its remains may still be seen, including limekilns, the site of an iron foundry, tramroad connections, and, of course, the canal-side pubs and workers' cottages.

Canal Boat Trips

Along the towpath, shaded by overhanging trees, horses gently pull a passenger-carrying canal boat from the Wharf to Penrefelin Basin, built to service the old slate wharf in the canal's heyday.

Longer trips to Froncysyllte and Berwyn are arranged for organised parties of 35 and over.

Montgomery Canal

Location: Between Llanymynech and Newtown on the England-Wales border.

Map 126/136

As a branch of the Shropshire Union Canal, the Montgomery Canal enters Wales at Llanymynech, and runs through Welshpool to Newtown. It was built between 1794 and 1821 by John and Thomas Dadford, who did much canal construction work in South Wales. Coal and lime were carried on the canal from mines and quarries near Llanymynech and Oswestry, to Newtown and Welshpool.

The 7 mile section from Burgedin Lock to Welshpool is now fully restored to cruising standard, with a slipway for boats at Wern near Burgedin. Locks have been restored and bridges reconstructed along this lovely stretch, and at Buttington Wharf, a picnic site has been provided (Map 126. Ref. 243094). Other noteworthy features here are the ruined limekilns, often found close to canal wharves. The towpath, a public right of way, makes a lovely walk, by quaint little lock-keepers' cottages, derelict locks and

bridges. It also forms part of the Offa's Dyke Path between Abbey Bank and the first lock at Pool Quay. Interesting aqueducts can be seen at Berriew and Carreghofa, 2½ miles west of Llansantffraid. (Map. 126. Ref. 253196.)

Trips are arranged on the canal for handicapped children, using a specially designed canal boat which was built following financial support provided by the Variety Club of Great Britain to the Prince of Wales Committee which has been carrying out this important project for a number of years. A leaflet, one of a series produced by Powys County Council's Planning Information Service, briefly describes the history of the canal from its construction to the present day. This is available from their Council offices in Llandrindod Wells.

Neath and Tennant Canals

Work began on the Neath Canal in 1792 and it was completed in 1795. The Tennant Canal came in 1824 and connected the two at Aberdulais. In the same way as other South Wales canals the Neath and Tennant served the local industries and transported coal, iron ore, finished iron and many other goods. Tramroads connected the canal with many of the works and quarries in the valley.

Through the efforts of The Neath and Tennant Canals Preservation Society a number of sections of the Canals have been restored and their towpaths made into pleasant walks.

Aberdulais, near Tonna, Neath, West Glamorgan. Aberdulais Canal Basin

Location: Take the turning to Tonna opposite the Dulais Rock Hotel on the A465. The canal basin, slipway and aqueduct are accessible through the arch behind the Railway Inn.

Map 170 Ref. 774994

The junction of the Neath and Tennant Canals. Aberdulais basin and Aqueduct were built in 1823-4 to join the Tennant Canal running from Swansea to the earlier built Neath canal running from Briton Ferry to Glyn-Neath. The Basin area and slipway are open to the public, and two walks along the Neath canal towpath are possible.

The first walk over the Skew bridge at the junction of the two canals takes visitors as far as Ynys Nedd farm near Clyne, or for a shorter walk up to Pant-y-Gwaith bridge where the canal can be crossed and a return made by road.

The second walk down the Neath canal from Aberdulais passes the old boat building workshops, lock and lock house at Tonna. The path can be taken to Bridge Street in Neath where a right turn over the river bridge will reveal the Tennant canal. Towards Swansea the Tennant canal passes Neath Abbey, whilst 1½ miles up the valley it crosses the river Neath and enters Aberdulais Basin.

Also to be seen at the basin are the toll house, lock keepers cottage, disused lock gates and the remains of two wooden barges.

Aberpergwm, near Glyn-Neath, West Glamorgan. Maesgwyn Canal Section

Location: Approached either from lay-by near Aberpergwm coal washery, 2 miles south-west of Glyn-Neath or from lay-by at Maesgwyn ½ mile down the A465 from Aberpergwm.

Map 160 Ref. 858051

This is another interesting section of the Neath Canal presently being restored by the canal society. Here the towpath and cutting are being improved and at Maesgwyn a recently restored bridge together with a nearby lime kiln, lock and the remains of a boat house are worth visiting. The remaining end wall of the boat house is unusual in being boat shaped, and from the lock it can be seen that barges would have unloaded raw materials above the lock to be tipped into the cupola of the kiln. The finished product being loaded into carts or barges at the lower level.

Visitors continuing down the canal from Maesgwyn can see Ynys-yr-allor lock and Aberclwyd lock with its three arched overflow wier. Between these locks is Cnel Bach a branch canal which used to link with a tram road carrying materials to and from Cwmgrwrach Ironworks in Blaengwrach.

Swansea Canal

Swansea Canal opened in 1798, is featured in the Lower Swansea Valley Industrial Trail on Page 26.

Further up the valley between Pontardawe and Ynys Meudwy where the canal is still in water the towpath makes an attractive walk. Although accessible from a number of points along the A4067, the best approaches are from Pontardawe town centre and from the Glan Afon Hotel in Ynys Meudwy.

Canoes can be now hired from a recently opened boating area on the canal, at Coed Gwilym Park in Clydach.

Resolven, near Neath, West Glamorgan.

Resolven Canalside Walks

Location: Start from Commercial Road Bridge Resolven, on B4434, just off A465 at junction to Resolven.

Map 170 Ref. 826031

Restoration work is in progress between Abergarwed (Ref. 818025) and Aberpergwm (Ref. 861056), with most of the original structures being retained and restored, and the cutting improved. There are two walks available.

The first walk (distance 1 mile) starts from the northern side of the bridge and runs along a good towpath, past the Resolven Basin and lock to Rheola. Points of interest include a cast Iron aqueduct cast at Neath Abbey in 1838, a canal cottage and several hump back bridges and lock chambers.

The second, and shorter walk starts from the south side of the bridge and runs under the cast Iron aqueduct cast at Neath Abbey in 1835 and over, the canal by the farmers lock onto a path leading to the A465. The ruin near the access to the main road was formerly a chapel of rest for funerals travelling by barge. The route then passes back along the A465, conveniently close to the Farmers Arms pub for that thirst-quenching drink!



A peaceful holiday, cruising on the Brecknock and Abergavenny Canal near Talybont.

The Monmouthshire Canal

At Pontymoile, near Pontypool, the Brecon and Abergavenny Canal joins the Monmouthshire Canal main line to Newport. A branch canal from Crumlin was completed in 1794 to convey iron and coal from the Ebbw Valley to the port.

Although no longer navigable beyond the first $1\frac{1}{4}$ miles, parts of the towpaths can still be followed through some interesting countryside, passing many industrial sites. There were 41 locks on this canal, compared with only 6 on the 33 miles of the B & A.

Access to Pontymoile Canal Junction from Fountain Road, off A4051, 1 mile south of Pontypool.

Fourteen Locks

Location: At High Cross, just off the M4 motorway at Junction 27, near Rogerstone.

Map 171 Ref. 285885

A section of the canal between Risca and Newport has been restored for much of its length, and now provides an attractive continuous footpath to the spectacular flight of Fourteen Locks. Here too there is a new interpretative centre which tells the fascinating story of the development of the Monmouthshire and Brecknock and Abergavenny Canals. A picnic site is located nearby, and walks are waymarked to make them easy to follow.

Open: Easter to September, daily excluding Tuesdays and Wednesdays 10.00 – 17.30 hrs. Rest of year by appointment only. Ring Gwent County Planning Department. Tel. Cwmbran 67711 Ext. 657/659.

The Glamorganshire Canal

Following the growth of Merthyr Tydfil as an ironworks' centre, the Glamorganshire Canal was developed to link the ironworks with Cardiff.

The following walks along sections of the route of the old Canal have been arranged by the Glamorgan Naturalists' Trust. As well as illustrating the early history of the canal and its importance to the Merthyr ironworks, they also show how it has been absorbed into the natural landscape of the South Wales coalfield.

Walk 1 – Merthyr Tydfil to Abercanaid

Location: Starts from the large car park in front of the Technical College, Merthyr Tydfil, just off the A470, by the bridge over the River Taff.

Map 160 Ref. 047062

Along this circular 4 mile route which follows the line of the canal for much of the way, you'll find there's a rich natural bird and plant life, as well as visual remains of the canal's earlier days, ironworkers cottages, etc.

A useful guide book is available, price 20p, including postage, from the Glamorgan Naturalists' Trust, c/o Nature Conservancy Council, 44 The Parade, Roath, Cardiff.

Walk 2 – Glamorgan Canal Wharf

Location: Starts by the former Melingriffith Works, beyond Velindre Road, Whitchurch, off A4054, 2 miles north of Cardiff city centre.

Map 171 Ref. 144805

This $1\frac{1}{4}$ mile long walk gives you the opportunity to view the rich bird and water plant life along the banks of a lower section of the canal, now designated a Nature Reserve.

A leaflet 'Glamorgan Canal Nature Reserve', priced at 10p, is available from Cardiff City Parks Department.

Walk 3 – Nightingale's Bush, Pontypridd

Location: $\frac{1}{2}$ mile east of Pontypridd, off A470. Entry at rear of the 'Bunch of Grapes' pub or opposite 'The Farmers Arms'.

Map 170 Ref. 076903

Nightingale's Bush – a romantically named section of the Glamorganshire Canal at Pontypridd, is today a local nature reserve, in the care of the Glamorgan Naturalists' Trust. Still in water, it is now an important freshwater habitat for a variety of plants and animals. Although heavily overgrown in the spring and summer months, there is plenty of interest for the industrial archaeologist, including disused locks, a bridge, canal-side cottages and a cast iron plate, dated 1856, which was part of a bridge spanning a short-branch canal into Brown Lenox chain works.

Open: At all times.

Boat Trips

A 'canal bus' operates along the B & A Canal in the Llanover area. Prior bookings necessary:

B & M Charters, Willsbrook, Raglan, Gwent. They also operate a 46 seater steam boat from Pencelli.

Half-hourly trips on a 12 seater 'water bus' run regularly from Goytre Wharf. Bookings through Red Line Boats, Goytre Wharf, Abergavenny, Gwent.



Coastal trade of the West Coast

You will enjoy exploring the little forgotten harbours of the west coast of Wales, where the descendants of many a Captain Cat – of Dylan Thomas's unforgettable 'Under Milk Wood' – still splice the mainbrace at some of the region's character-full pubs with nautical names – like the Ferry Inn at Hazelbeach, the Jolly Sailor at Burton, the Sloop Inn at Porthgain and the Ship Aground at Dinas. In West Wales, before the coming of the railways, the sea captain was king. In 1760 Abel Hicks of Tremanhire near St. David's, was such a man; his 'Industrious Bee' could be seen in and out of every port from Bristol to Dublin, carrying corn, coal and anthracite culm out and bringing back what he could – as well as a multitude of little purchases entrusted to him by his neighbours. Boatbuilding was a common sight along the shores. Limekilns puffed away quietly at the head of almost every creek and one or two ports like Aberystwyth and Porthmadog broke into the big time with a single commodity such as slate or mineral ore.

'A man doth sand for himself, lyme for his sonne, and marl for his grandchild', says a 16th century scribe in West Wales. Evidence of their foresight could be found at the head of almost every creek, where the local limekiln was located. These 'friends of agriculture', as an early 19th century writer described them, provided lime for the land. Larger groups of kilns built into hillsides, supplied lime cement for new building.

Kiln Park limekilns, near Tenby.



Porthgain Harbour, with remains of stone crushing plant.

Neyland, Dyfed. Promenade Limekiln

Location: On B4325 at junction with by-road to Hazelbeach.

Map 157/158 Ref. 958052

A single kiln let into a bank below a bungalow. Once standing on the edge of the tidal creek, the kiln now fronts the Military Road built in the 1860s, originally as a tramroad to carry stone imported by boat to a temporary pier for the building of Scoveston Fort, 1¼ miles north-west.

Tenby Dyfed Kiln Park Limekilns

Location: Halfway between main gate and site office at Kiln Park Caravan Site, ¼ mile south-west of Tenby on A4139. Entrance by permission of site owners.

Map 158 Ref. 118002

A magnificent bank of kilns within a facade pierced by ogive-shaped doorways, the whole, well-preserved Nash-designed group have the air of an old abbey's cloisters. They were served with limestone from West Williamston and with coal from the pits near Saundersfoot.

Solva, Dyfed. Solva Limekilns

Location: At the head of Solva Creek, a village on A487, 3½ miles east of St. David's.

Map 157 Ref. 806243.

Thirty vessels of 20 to 250 tons worked out of Solva in 1811. Most of the smaller vessels brought limestone from Lawrenny and culm (slack of anthracite) from Hook or Saundersfoot for 'firing and manuring of the neighbourhood', we are told. The manuring was with lime produced in two kilns, then situated in the village's developing main street, and whose 'hot vapour and the dirt and noise of carting' made them very offensive. The present kiln remains are seen in the hill on the east side of the fiord-like creek.

Industrial heritage – a bird's-eye view from the bridge over Milford Haven

Location: Linking north and south banks of the Milford Haven between Pembroke Dock and Burton.

Map 157/158 Ref. 974050

The toll bridge, itself a major industrial feat, gives wide views of the Haven's major industrial works; particularly westwards to the new oil refineries north and south of the harbour, and the 700ft. high chimney of the new Pembroke Power Station. But there are also some fascinating glimpses of the past:

The view south-west:

Pembroke Dock, Dyfed.

Packet Terminus and R.N. Dockyard

Map 157

Hobbs Point (968042) is a small quay south-west of your vantage point on the Haven bridge.

Until the bridge was built Hobbs Point was landing place for the ferry from Neyland. As long ago as 1836 it became the packet point for the cross channel service to Ireland, served by a nippy little fleet with fine names: Auckland and Camden, Adder, Monkey and Viper. Firefly was the reserve boat and

she was kept anchored in the Kings Road for emergencies.

Beyond Hobbs Point lie the Celtic Sea oil quay – newly built – behind that the former R.A.F. Sunderland seaplane base (1935–1957) and just beyond are boatyards and Carr Jetty (956040) of the former Admiralty dockyard. The late 18th century battleships yard at Neyland gave way from 1800 to an R.N. dockyard at Milford town; here were launched seven ships from the 'Nautilus' of 443 tons, on 12th April 1804, to the 'Rochfort' of 2,082 tons in 1814. In that year construction moved to a new yard at Pembroke Dock, then called Paterchurch, where it stayed until 1925. Hancock's private shipyard continued to construct small vessels at Pembroke Dock and at the mouth of Barnlake Pill almost under the northern end of the Haven bridge.



The view due west:

Neyland, Dyfed.

Boat building and cross-channel ferry terminals

Map 157/158 Ref. 968048

Directly under the Haven bridge is the anchorage known as King's Road where King Richard II's ships waited in 1393 for fair weather to take them to Ireland and for their monarch to visit Llanstadwell church, 1 mile west. In 1759 'HMS Milford' was launched into Kings Road from the boat yard (967049) of Fisher and Bird, then located on Neyland Point. A 28 gunner, she was followed in 1765 by 'HMS Prince of Wales', a 54 gunner.

Two hundred yards west (966047) of the Neyland Point lie the remnants of 'Sela', a brigantine of 194 tons, with bottom felted between timbers diagonally doubled and held with iron bolts, built in Prince Edward Island, Nova Scotia in 1859 by H Hayon. At the turn of the century this 109.7ft. long sailer was owned by the Whitstable Shipping Company. A few hundred yards west, Neyland Yacht Club slipway (964048) faces Great Eastern Terrace, overlooking the beach where in 1860, after her first voyage to New York, Isambard Kingdom Brunel's great ship, the 'Great Eastern', lay on a grid iron undergoing repairs.

Brunel chose Neyland as terminus (967049) for his Waterford and Cork service. As the South Wales Railway it was completed in broad gauge, double line, in 1856, and the spacious cuttings to accommodate it can be seen if you move $\frac{1}{2}$ mile north to the road bridge over Barnlake Pill. Parts of the old Barlow rails used in the 7ft. gauge track are still used as uprights for the railings on the sea wall by the slipway at Neyland Point; the 7ft. gauge was changed to 4ft. 8 $\frac{1}{2}$ in. on 12th May 1872. Cross channel services moved from Neyland to Fishguard on 30th August 1906 and the Cork service moved from there to Swansea some years ago; it has since moved back again to the deep waters of the Haven, at Pembroke Dock.

Maritime Museums

Aberdovey, Gwynedd.

Outward Bound Sailing Museum

Location: On the waterfront.

R.N.L.I. donations box is provided.

Map 135 Ref. 614959

A port with a long history of boatbuilding, Aberdovey has a small but interesting maritime museum with some good little exhibits – model sailing ships, sailors' tools, ropework, models, photographs, drawings, early R.N.L.I. equipment and navigation instruments.

Open: Summer only. Most days, including weekends and Bank Holidays, 09.00 – 17.00 hrs. (approx).

Barmouth, Gwynedd.

Barmouth R.N.L.I. Maritime Museum

Location: At Pen y Cei, The Quay, Barmouth.

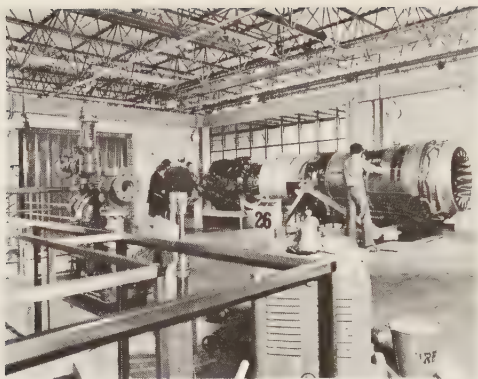
Map 124 Ref. 615155

The story of the lifeboat service in Wales, as elsewhere, is one of exemplary bravery. Names like Moelfre and Mumbles – in North and South Wales respectively – spring to mind. Cardigan Bay has its rougher moments and lifeboats along the coast are ever ready and willing to turn out. Help them by visiting the R.N.L.I. Museum. Entrance is free, but voluntary donations are accepted. Exhibits include models of lifeboats, yachts and other vessels, old photographs dating from 1860, lifeboat equipment – old and new – R.N.L.I. awards and honours, records of early rescues.

Open: Easter weekend, then Spring Bank Holiday to mid September. Monday to Saturday 11.00 – 13.00 hrs., and 14.00 – 16.00 hrs. and 19.00 – 21.00 hrs. Sundays – afternoon and evening only. Winter by arrangement.

An artist's impression of Neyland in the 18th century when it was a 'man of war' shipyard.





The Welsh Industrial and Maritime Museum, Cardiff.

Caernarfon, Gwynedd.

Caernarfon Maritime Museum

Location: In Victoria Dock, Caernarfon. Can be approached from Bangor road or from main town centre by castle walls.

Map 115 Ref. 478632

Seiont II, a coal fired steam dredger once used by Caernarfon Harbour Trust, now berthed in the Victoria Dock, is to become part of the new Caernarfon Maritime Museum. Restoration work has already started on the steam compound engine built in 1937 by Yarwood of Northwich. In a dockside building a museum is being established, showing the importance of Caernarfon as a slate exporting port. Further information about the project from Frank Jones, Voelas, Tregarth, near Bangor, Gwynedd. Tel. (0248).

Open: Museum, from Easter to end of September, daily 10.00 – 17.00 hrs. Further work needs to be undertaken on the dredger, before it will be open to the public.

Cardiff, South Glamorgan.

Welsh Industrial and Maritime Museum

Location: West Bute Dock Basin, at the southernmost extremity of Bute Street, near the entrance to the Docks.

Map 171 Ref. 192744

Stage I of the National Museum of Wales's new Welsh Industrial and Maritime Museum has been completed. It occupies a near 4 acre site and includes the old Bute West Dock Basin. The ground floor of the exhibition area has been designed in the main for large and heavy exhibits – a triple expansion engine, an early generator, a haulage engine, an early diesel compressor, a turbo alternator, a gas engine and a beam engine. Their total weight is estimated at about 200 tons. An early tug, which operated in the Bristol Channel, is being renovated for display in the docks. Among the outdoor exhibits are the 'Kindly Light', a Barry sailing pilot cutter of 1911, docks' cranes, a steam crane, a Neath Canal narrow boat and a steam locomotive which children are invited to climb aboard.

Open: All year. Monday to Saturday 10.00 – 17.00 hrs. Sundays 14.30 – 17.00 hrs.

Pembrokeshire Coast. National Park Site Cards. A new range of publications, called Site Cards, have been launched by the Pembrokeshire Coast National Park. Pembrokeshire's Coastal Trading is the theme for the first 15 cards in the series; sites include major towns and ports along the coast, including Haverfordwest, Tenby and Fishguard. Each card is weatherproofed, making it a practical field guide for individuals, groups and parties.

Further Site Cards on a variety of themes, including archaeology and industrial history are also planned.

Available at all National Park Information Centres or direct from the National Park Information Service, County Offices, Haverfordwest, Dyfed.



At Porthmadog Harbour the Garlandstone's cargo hold, now a museum.

Porthmadog, Gwynedd.

Porthmadog Maritime Museum

Location: Aboard the sailing ketch 'Garlandstone', moored at Porthmadog Harbour.

Map 124 Ref. 570384

The 'Garlandstone' did much of her work out of the West Wales ports. Now she has found a worthy resting place among the holiday craft in Porthmadog's harbour, which she first visited in 1909. Displays in the cargo hold tell the story of the harbour's life a hundred years ago.

Open: Daily, April to September including Bank Holidays 10.00 – 18.00 hrs.

Swansea, West Glamorgan.

Swansea Maritime and Industrial Museum

Location: Adjacent to the giant new Leisure Centre, Oystermouth Road, Swansea.

Map 159 Ref. 658926

Swansea's considerable nautical past is brought to life in this new museum. One gallery tells of the role of the docks, illustrating it with old prints and model boats. Another includes a complete working woollen mill.

Open: Monday to Saturday 10.30 – 17.30 hrs. Closed Sunday. Admission free.

Tours and Weekends

With the growing interest in Wales's industrial heritage, a number of tour operators and hotels are arranging special tours and weekend packages which will include visits to some of the many fascinating sites featured in this guide.

Societies and groups should note that the Department of Industry at the National Museum of Wales in Cardiff, can arrange individually-tailored tours of industrial sites of note in Wales. Their programme of Family Expeditions, led by knowledgeable guides, also features some industrial archaeological tours. For details of these expeditions, which normally run from spring to autumn, telephone or write to the National Museum of Wales, Cathays Park, Cardiff. Tel. Cardiff (0222) 397951.

Please confirm availability of tours and weekends, and all other details, with the operators themselves.

Leisure Learning Weekends

The Royal Hotel

Cardiff, South Glamorgan.
St. Mary Street.

Cardiff and the Valleys

An industrial archaeology weekend is planned, based at the Royal Hotel in Cardiff, as part of Embassy Hotels' programme of "Leisure Learning Weekends". Places visited will include the Welsh Folk Museum at St. Fagan's, on the outskirts of the city, the Welsh Industrial and Maritime Museum in Cardiff's Docks, and the Rhymney Valley, which has some fine examples of workers housing, railway architecture etc.

Industrial Heritage in South Wales and the Severn Estuary

Barns and boats, bridges and buildings, Brunel and Brindley, all feature in this weekend based on Cardiff and Bristol. Cardiff's new Maritime Museum affords a superb view of the former layout of Cardiff Docks, whilst a visit to the fascinating St. Fagans Welsh Folk Museum provide opposing but complementary glimpses into the development of the Welsh landscape.

The Canals of South Wales

The fact that the canals of South Wales were never connected to the extensive system of inland waterways of lowland England gives a uniquely interesting flavour to their history, their engineering and their development. We will explore some of the more isolated canals around Swansea and parts of the now

disused Glamorganshire Canal; whilst on the Monmouthshire, Brecon and Abergavenny Canals system, visits will be made to points such as the Risca Interpretation Centre and the locks at Cwmbran, restored under a job creation scheme. There will, of course, be a chance to cruise the delightful Brecon and Abergavenny Canal.

Further details and booking arrangements from Embassy Hotels Ltd., Burton-upon-Trent, Staffordshire DE14 1BZ. Tel. (0283) 66587.

Lewis Griffith Travel

8a Cefn Coed Road, Cyncoed, Cardiff.
Tel. (0222) 764455.

Extended tours, starting in London and featuring the industrial heritage of the South Wales coalfield, the harbours of the Pembrokeshire Coast and the slate quarrying district centred upon Llanberis and the North Wales Quarrying Museum.

These tours are arranged specifically for societies, groups and youth travel organisations, U.K. based and from overseas.

Full details of the tours, which can be individually tailored to suit group/party requirements, from Lewis Griffith Travel at the above address.

'How Green was My Valley' Tour

This tour is based on the popular novel by Richard Llewellyn, recently televised as a series in Britain and overseas. It shows the contrast between the industrial landscape of the valleys and the beautiful countryside of South Wales.

The Tour begins with a visit to the Welsh Miners' Museum in the Afan Valley and is highlighted by a concert performed by the Aber Male Voice Choir, who took part in the T.V. series. Accompanying the tour will be a character from the series, whenever available. Among other arrangements which can be made is a tour of a typical mining village, including a visit to a coal mine.

Specifically for groups - minimum 20 persons.

Full details, including tariff and availability, from John B. Jones, Cardiff Travel Centre, 9 Upper Clifton Street, Cardiff, South Glamorgan. Tel. (0222) 492362. Telex 497273.

The Castle Hotel

Merthyr Tydfil, Mid Glamorgan.
Tel. Merthyr Tydfil (0685) 2327.

Merthyr Tydfil was, in the second half of the 18th century, on its way to becoming the world's largest iron-manufacturing centre, with one ironworks alone, by 1840, employing 10,000 people.

This special industrial archaeology weekend is well placed at the Castle Hotel for exploring the town's many industrial sites. Guided tours, led by experts in the field of industrial archaeology, are planned to the remains of the town's ironworks, the Dowlais Stables, Penydarren Tramroad, and the site of the Glamorganshire Canal. Visits will also be arranged to other important sites in the South Wales coalfield.

(The modern hotel has 50 bedrooms, all with private bathrooms, T.V. and radio).

Full details, including tariff, available from the hotel at the above address.

A Taste of Adventure

R. L. Walker

18 Gladys Street, Coedely, Tonyrefail, Porth. Mid Glamorgan. Tel. Tonyrefail (04433) 671398.

A small and friendly organisation offering a wide range of services to walkers and industrial archaeologists. A Taste of Adventure, in conjunction with the Brecon Beacons National Park and various other bodies, is designing an industrial trail around the Dinas Rock Silica Mines, near Pont-nedd-Fechan, Glyn Neath. This and other areas of industrial archaeological interest in Wales feature in their programme of adventure holidays. Activities include mine exploration, caving, cavecraft etc. Can cater for groups and individuals, for those with a holiday interest or the enthusiast. Will tailor-make tours and lectures for students, families and individuals.

Full details, including tariff from R. L. Walker from the above address.

W. E. & R. K. Swan (Hellenic) Ltd.

237/8 Tottenham Court Road, London W1P 0AL. Tel. (01 636) 8070.

Swan (Hellenic), established operators of special interest holidays, offer tours of industrial archaeological sites of importance in England and Wales. Places visited include the North Wales Quarrying Museum, Llangollen's Canal Exhibition Centre, Pontcysyllte Aqueduct, near Chirk and many other museums and places associated with Britain's early industrial development.

Full details from Swan (Hellenic) Ltd at the above address or from your local travel agent.

Snowdonia National Park Study Centre

Plas Tan-y-Bwlch, Maentwrog, Gwynedd LL41 3YU. Tel. Maentwrog (076 685) 324.

A series of weekend and weekly courses covering a wide variety of subjects, are arranged at Plas Tan-y-Bwlch, a spacious country house set in 105 acres of wooded grounds and ornamental gardens.

The following are included in their programme of industrial archaeology and pure archaeology courses:—

Field work in Archaeology

An introduction to the techniques of field work and surveying in archaeology, during which a wide variety of sites will be visited. Suitable for both beginners and those in need of practical experience.

Introduction to Industrial Archaeology

A varied week-long course examining some of the many remains of the Industrial Revolution in Snowdonia, including gold mining, copper mining and slate quarrying.

History and Landscape of Snowdonia

Gain a new perspective of North Wales by looking at the way man's impact through agriculture and industry over the last 10,000 years has resulted in the present landscape.

Water Power

A varied week looking at ways in which water power has been used for domestic and industrial purposes, culminating if possible with a visit to the Dinorwic

Hydro-Electric pumped storage scheme, now nearing completion.

Industrial Archaeology Survey

Spend a spring weekend in good company learning the rudiments of industrial archaeology surveying and helping to record.

Industrial Archaeology

A chance to visit some sites of past mining and quarrying in the remote hills of Snowdonia.

The line that refused to die

The story of the Ffestiniog Railway from its earliest days through to the present and its hopes for the future, told by some of the people who refused to let it die.

Tour to Nantgarw Colliery

Although the Big Pit at Blaenavon, in Gwent's Eastern Valley, has been earmarked for development as a major tourist attraction, it will be some years before we see this coal mine opened to visitors.

But from Cardiff you can take an exciting 2 hour long tour by open top bus (weather permitting) to the Nantgarw Colliery, near Caerphilly. Mine officials take visitors on a conducted tour of the surface of the mine, explaining how a modern pit actually works. In the exhibition room there's a complete miniaturized layout of an underground coal-face. The tour also includes a visit to the lamp room, winding house, power house and the shafts where the mineworkers go underground. Period of operation: Easter to end of September. Timetables are available from the City of Cardiff Transport Offices, Wood Street, Cardiff CF1 1NQ. Tel. (0222) 396521 or from the Wales Tourist Board Information Centre in 3 Castle Street, Cardiff. Tel (0222) 27281.



Danywenallt Study Centre

Talybont-on-Usk, Brecon, Powys. Tel. Brecon (087 487) 677.

Industrial archaeology and local history feature on the programme of courses held at the Brecon Beacons National Park Study Centre at Talybont-on-Usk. Educational and other groups may also book at the centre to follow their own programme of activity. Accommodation for total of 22 on a full board basis at the centre. Farmhouse accommodation can also be arranged. Available all year, excluding Christmas and New Year. Suitable for disabled visitors.

Full details, including programme from: John R. Jones, Director of Studies at the above address.

Field Studies Council

Draper's Field Centre, Rhyd-y-creuau, Betws-y-Coed Gwynedd. Tel. Betws-y-Coed (069 02) 494.

This centre in the heart of the National Park, offers a whole range of long and short courses on the rich and varied environment of Snowdonia. Industrial archaeology is just one of those many subjects offered. Accommodation is at the centre, which has a total capacity for 60 people. Groups and individuals welcomed. There are also facilities for visiting college and school groups who will be helped to run their own programmes.

Further details from: A. J. Scharer, The Warden and Director of Studies at the above address.

Museums in Wales

In addition to the industrial museums already mentioned in this guide, the following also exhibit material relating to the industrial heritage of Wales:

Abergavenny, Gwent

Abergavenny and District Museum

Tel. Abergavenny 4282.

Traditional rural crafts.

Abertillery, Gwent

Abertillery and District Museum *see page 38.*

Bangor, Gwynedd

Penrhyn Castle

Tel. Bangor 53084.

Industrial railway museum.

Bargoed, Mid Glamorgan

Bargoed & District Railway Society Museum

The Institute, Cardiff Road.

Tel. Bargoed 832207.

Society museum to Rhymney Valley line.

Bethesda, near Bangor, Gwynedd

Family Tree Museum

Tel. Bethesda 600234.

Old farming implements.

Betws-y-Coed, Gwynedd

Conwy Valley Railway Museum

Old Goods Yard.

Tel. Betws-y-Coed 568.

Brecon, Powys

Brecknock Museum

Captain's Walk.

Tel. Brecon 4121/2.

Small rural industries display.

Bwlchgwyn, near Wrexham, Clwyd

Milestones Visitor Centre

Tel. Wrexham 757573.

Geological museum. Industrial relics on outside display.

Cardiff, South Glamorgan

The National Museum of Wales

Cathays Park.

Tel. Cardiff 397951.

Simulated coal mine; displays relating to most industries in Wales up to present day.

Treffgarne, Dyfed

Nant-y-Coy Mill and Museum

Tel. Treffgarne 686/671.

Former water-mill.

Usk, Gwent

Wolvesnewton Folk Museum

Tel. Wolvesnewton 231.

Traditional and rural industries exhibits.

Cardiff, South Glamorgan

Welsh Folk Museum

St. Fagans.

Tel: Cardiff 569441.

Rural industries.

Chepstow, Gwent

Chepstow Museum

Bridge Street.

Tel. Chepstow 5981.

Corris, Gwynedd

Corris Railway Museum

Tel. Anstey 2133.

Limited opening.

Llanidloes, Powys

Museum of Local History and Industry

Old Market Hall

Exhibits relating to the Chartist outbreak in the town.

Llanrhaeadr, near Denbigh, Clwyd

Yr Hen Felin, Pentre

Tel. Llanynys 239.

Rural industries; collection of hand tools.

Llanvapley, Gwent

Rural Crafts Preservation Society

Tel. Llantilio 210.

Rural industries display.

Newport, Gwent

Newport Museum and Art Gallery

John Frost Square.

Tel. Newport 65781.

Special features on Newport's Transporter Bridge, Chartists' Movement and other aspects of local history.

Risca, Gwent

Industrial History Museum

Former Pontymister Upper School.

Private museum open Saturday mornings or by appointment

Swansea, West Glamorgan

Royal Institution of South Wales

Victoria Road.

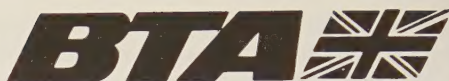
Tel. Swansea 53763.

Tintern, Gwent

Tintern Abbey Exhibition Gallery

Tel. Tintern 251.

Section relating to Angidy Valley industries. (See also Old Railway Station nearby).



Tourist Information Centres

When travelling in Wales look out for the above sign signifying a Tourist Information Centre. There are over 60 such centres located at key points throughout Wales. Below you will find a selection of the main centres.

North Wales

Colwyn Bay, Clwyd

North Wales Tourism Council, Glan-y-don Hall, Civic Centre. Tel. (0492) 56881. (Written enquiries and bed bookings only) Regional head office.

Betws-y-Coed, Gwynedd

Tourist Information Centre, Waterloo Complex. Tel. (06902) 426.

Holyhead, Isle of Anglesey, Gwynedd.

Tourist Information Centre, Salt Island Approach. Tel. (0407) 2622.

Llangollen, Clwyd

Wales Tourist Office, Town Hall. Tel. (0978) 860828.

Llanberis, Gwynedd

Tourist Information Centre. Tel. (028682) 765.

Mid Wales

Machynlleth, Powys

Mid Wales Tourism Council, Owain Glyndwr Centre. Tel. (0654) 2401 or 2653.
(Regional head office and Information Centre).

Llandrindod Wells, Powys

Tourist Information Centre, Town Hall Gardens. Tel. (0597) 2600.

Welshpool, Powys

Tourist Information Centre, Vicarage Garden Car Park. Tel. (0938) 2043.

South Wales

Carmarthen, Dyfed

South Wales Tourism Council, Darkgate. Tel. (0267) 7557 Regional head office.

Abercraf, Powys

Tourist Information Centre, Dan-yr-Ogof Caves. Tel. (063977) 284.

Cardiff, South Glamorgan

Tourist Information Centre, 3 Castle Street. Tel. (0222) 27281.

Kilgetty, Pembs. Dyfed.

Wales Tourist Board and Pembrokeshire Coast National Park Information Centre, Kingsmoor Common. Tel. (0834) 813672/3.

Raglan, Gwent.

Tourist Information Centre, Pen-y-Clawdd Service Area (on A40). Tel. Dingestow (060083) 694.

Argentina. British Tourist Authority, Av. Cordoba 645 P. 2°, 1054 Buenos Aires, Tel. 392-9955

Australia. British Tourist Authority, 171 Clarence Street, Sydney, N.S.W. 2000. Tel. 29-8627

Belgium. British Tourist Authority, 23 Place Rogierplein 23, 1000 Brussels. Tel. 02/218.67.70.

Brazil. British Tourist Authority Avenida Ipiranga 318-A, 12 Andar, conj. 1201 01046 Sao Paulo = SP. Tel. 257-1834.

Canada. British Tourist Authority, 151 Bloor Street West, Toronto, Ontario M5S 1T3. Tel. (416) 925-6326.

Denmark. Det Britiske Turistkontor, Montergade 3, DK-1116 Copenhagen K. Tel. (01) 12 07 93

France. British Tourist Authority, 6 Place Vendôme, 75001 - Paris. Tel. 296 47 60.

Germany. British Tourist Authority, Neue Mainzer Str. 22, 6000 Frankfurt a.M. Tel. (0611) 23 64 28.

Italy. British Tourist Authority, Via S. Eufemia 5, Rome 00187. Tel. 678.4998 or 678.5548.

Japan. British Tourist Authority, Tokyo Club Building, 3-2-6 Kasumigaseki, Chiyoda-ku, Tokyo 100. Tel. 581-3603 or 581-3604.

Mexico. British Tourist Authority, Rio Tiber 103-6 piso, Mexico 5 D.F. Tel. 511.39.27 or 514.93.56.

Netherlands. British Tourist Authority, Leidseplein 5, 1017 PR, Amsterdam. Tel. (020) 23 46 67.

New Zealand. British Tourist Authority, Box 3655, Wellington.

Norway. British Tourist Authority, Postboks 1781 Vika, Oslo 1. Tel. (02) 41 18 49.

South Africa. British Tourist Authority, Union Castle Building, 26 Loveday Street, PO Box 6256, 2000 Johannesburg. Tel. 838 1881.

Spain. British Tourist Authority, Torre de Madrid 6/4, Plaza de España, Madrid 13. Tel. 241 13 96 or 248 65 91.

Sweden. British Tourist Authority, For visitors: Malmkillnadsg 42 1st floor. For mail: Box 7293, S-103 90 Stockholm 40. Tel. 08 - 21 14 44.

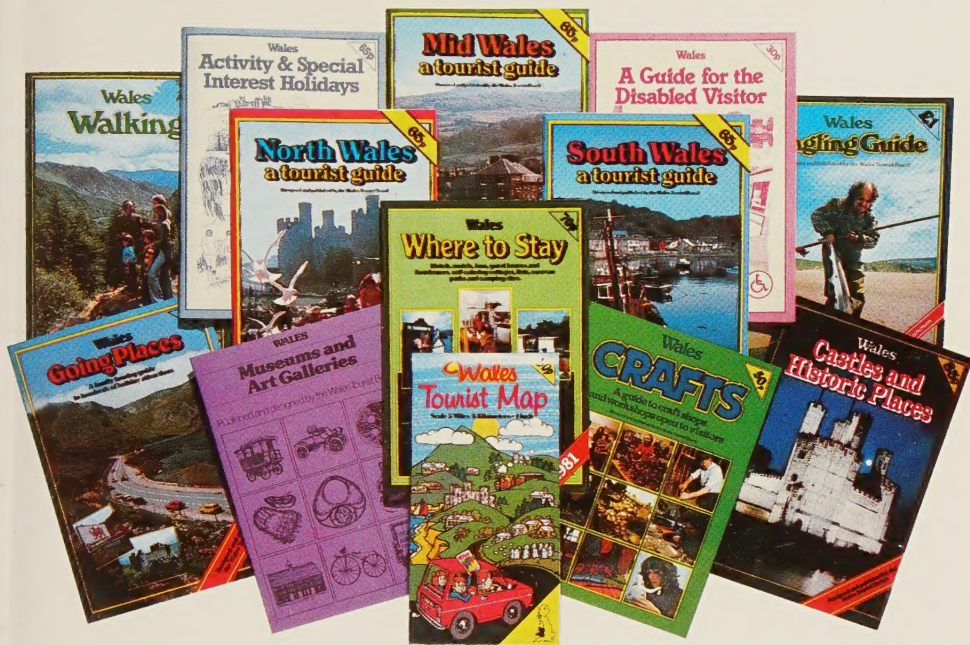
Switzerland. British Tourist Authority, Limmatquai 78, 8001 Zurich. Tel. 01/47 42 77 or 42 42 97

USA

680 Fifth Avenue, New York, NY 10019. Tel. (212) 581-4700
612 South Flower Street, Los Angeles CA 90017 Tel. (213) 623-8196.
John Hancock Center (Suite 3320), 875 North Michigan Avenue, Chicago IL 60611.

In London. British Tourist Authority, 'Welcome to Britain' Tourist Information Centre, 64 St. James's Street. London SW1. Tel. 01-629 9191.

Take your pick from our range of publications



For your copies of the publications featured here write to the
WALES TOURIST BOARD, PO BOX 1, CARDIFF CF1 2XN,
 enclosing the appropriate remittance, in the form of a cheque, postal or
 money order. NOTE: All prices quoted include the cost of postage and packaging.

Where to Stay in Wales **Price 70p**

The most comprehensive guide to holiday accommodations in Wales – thousands of addresses – hotels, guest houses and farmhouses, inns, self-catering cottages, flats and chalets, camping and caravanning.

Guides to North, Mid and South Wales Price 90p each.

What to see and do in Wales's three holiday regions. Each guide has A-Z gazetteers, maps, beach information, activities and attractions.

Wales Tourist Map Price 70p

A real bestseller. Detailed 5 miles/1 inch scale; also includes a wealth of tourist information.

Going Places Price £1.05

Full of carefully-planned motor tours and information on places to visit. A must for family touring around Wales.

Castles and Historic Places **Price £1.15**

Recently revised 92 page guide describing over 120 castles and historic sites. Introductory section on Welsh history.

Walking Price 80p

Describes hundreds of waymarked and un-waymarked walks, long and short, easy and challenging, throughout Wales.

Angling Price £1.30

112 page guide packed with information and advice for visiting sea, game and coarse fishermen.

Crafts Price 70p

Attractive, completely revised guide to crafts workshops in Wales, – including woollen mills, potteries, slate, stone and woodcarvers, jewellery, metal and leatherworkers.

Museums and Art Galleries **Price 50p**

Lists 100 fascinating, informative places to visit, including both national and local museums.

Activity and Special Interest Holidays Price 80p

A new guide to the wide range of inclusive holidays with a difference – from pony trekking to hang gliding, cycling to arts and craft courses

Wales – A Guide for the Disabled Visitor Price 30p

A most useful guide, includes detailed information about accommodation, tourist attractions and amenities such as theatres and sports centres with facilities for the disabled visitor.



WALES



KS-530-264

